



ECCOMAS Congress 2016

VII European Congress
on Computational Methods in Applied Sciences
and Engineering

June 5-10, Crete, Greece

PROGRAMME



Conference Secretariat:
Institute of Structural Analysis and Antiseismic Research
National Technical University of Athens, Greece

Conference Center

Level 1	Level 0
Zeus East	Minos East
Zeus West	Minos South
Zeus North	Minos North
Room 18	Danae
	Europa
	Leda
	Athena
	Artemis
	Aphrodite
	Exhibition Hall

Terra Building

Pool Level	Level 0
Room 7	Room 1
Room 8	Room 2
Room 9	Room 3
Room 10	Room 4
Room 11	Room 5
Room 12	
Room 14	
Room 15	
Room 20	
Room 21	
Room 22	
Antigoni	

Lobby Level

Registration
Secretariat
Room 17
Room 23

ECCOMAS Congress 2016



creta maris

Maris Building

Level 1

Apollo East
Apollo West





ECCOMAS Congress 2016

7th European Congress on Computational Methods
in Applied Sciences and Engineering

5-10 June 2016, Crete Island, Greece

Programme

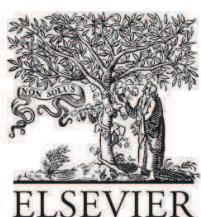


Institute of Structural Analysis and Antiseismic Research
School of Civil Engineering
National Technical University of Athens

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Sponsors and Exhibitors



Supporting Organizations

- Greek Association for Computational Mechanics (GRACM)
- Institute of Structural Analysis and Antiseismic Research, National Technical University of Athens
- John Argyris Foundation
- Institute of Research and Development for Computational Methods in Engineering Sciences (ICMES)
- Computer Applications and Education in Engineering Sciences (CAEES)
- Region of Crete
- Municipality of Hersonissos

Greetings from the President of ECCOMAS

The choice of Greece as the host country for the Congress 2016 of the European Community on Computational Methods in Applied Sciences (ECCOMAS) reminds us that this is the region where the foundation stone for European culture, its philosophy and sciences were laid 500 to 300 years B.C., long before it spread out to other parts of Europe. A magnificent symbol for this situation is the famous painting of the Italian Renaissance artist Raphael "The school of Athens", also called "Plato's Academy", a fresco in the Stanza della Segnatura in the Vatican, painted in 1510/11. Almost every great Greek philosopher or scientist can be found in the painting, among them Plato, his teacher Socrates, Aristotle, Euclid or Archimedes and Pythagoras. The composition could also be looked upon as a symbol for the convention of seemingly different disciplines, demonstrating the interdisciplinary character of the sciences.



Raphael's "School of Athens" (1 Plato, 2 Aristotle, 3 Socrates, 4 Euclid or Archimedes, 5 Pythagoras, 6 Diogenes) *

At that time the place of our venue, the Island of Crete, was at the periphery of the ancient Greece. We owe the choice of this wonderful place to the chairman of this congress, Professor Manolis Papadrakakis, a native of Crete, and his colleagues of the Greek Association for Computational Mechanics (GRACM). The ECCOMAS Congress takes place every four years, alternating with the Conferences on Computational Mechanics in Solids, Structures and Coupled Problems (ECCM) and Computational Fluid Dynamics (ECFD). It turns out that these meetings become major scientific events; we realize that also for

the present congress over 2,200 participants registered coming from all regions in Europe and a considerable number also from other continents. The spectrum of the 162 Minisymposia is impressive, clearly demonstrating that modeling and simulation in the applied sciences became a third pillar besides theory and experiment; we cannot imagine our daily life in academia and practice without these accomplishments. Thanks to all participants, in particular the Minisymposium organizers, plenary and semi-plenary lecturers and the chairpersons.

On behalf of ECCOMAS and its 23 regional and national associations in 31 European countries it is a great pleasure for me to welcome all delegates to the 7th European Congress on Computational Methods in Applied Sciences and Engineering.

Such a large conference is a tremendous challenge for the organizers. I would like to take this opportunity to particularly thank the Congress Chairman Manolis Papadrakakis and his colleagues in the Local Organizing Committee from the National Technical University of Athens, the Technical University of Crete and the University of Thessaly for the excellent organization and the permanent support during the preparation of this meeting. We are also very grateful for the continuous assistance by the Conference Secretary Eva Konti and her efficient team. My best wishes to all participants for a successful conference and an enjoyable stay in Crete.

**The painting was also reproduced on the front cover of the first book on Isogeometric Analysis referring to a phrase “άγεωμέτρητος μηδείς εισίτω” - “Let no one ignorant of geometry enter” allegedly engraved at the door of Plato's Academy.*



Ekkehard Ramm
Honorary Congress Chairman
President of ECCOMAS

Greetings from the Congress Chairman

Dear Participants,

On behalf of the European Community on Computational Methods in Applied Sciences and Engineering (ECCOMAS), it is our great pleasure to welcome you to Heronissos, Crete at the 7th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS Congress 2016). The Congress is organized by the Institute of Structural Analysis and Antiseismic Research of the National Technical University of Athens under the support of the Institute of Research and Development for Computational Methods in Engineering Sciences (ICMES) and the Computer Applications and Education in Engineering Sciences (CAEES).

The main objective of ECCOMAS Congress series is to provide a forum for presentation and discussion of state-of-the-art advances in computational methods in applied sciences and engineering, including basic methodologies, scientific developments and industrial applications and to serve as a platform for establishing links between research groups of academia and industry with common as well as complementary activities. About 2,200 participants are attending the ECCOMAS Congress 2016 in Crete. More than 2,600 abstracts related to all areas of computational methods in applied sciences and engineering have been submitted, out of which 2,200 have been accepted for presentation by authors of 53 countries around the world. Furthermore, 715 full length papers have been submitted and reviewed by members of the scientific committee and will be indexed by SCOPUS database. The scientific programme of the ECCOMAS 2016 Congress consists of 8 plenary lectures, 27 semi-plenary lectures, 162 minisymposia, 8 special technological sessions, one minisymposium dedicated to the Young Investigators Committee of ECCOMAS. Furthermore, the 6th ECCOMAS Olympiad will be hosted by the Congress where the best PhD theses approved by a university or research organization in Europe during the year 2015 will be presented.

ECCOMAS Congresses have, apart from their advanced scientific perspective, a strong cultural and social dimension. In this context, a number of events will take place during the course of the Congress which will complement the scientific programme. The Opening Speech by Theodosios Tasiros, will illustrate the achievements of the four great engineers of the Hellenistic era: Ctesibius, Archimedes, Philon and Heron which among other engineering achievements include various fully operational automata and the first prerequisite for the analog computer, i.e. the Antikythera Mechanism. During the Welcome Reception, Antonis Martsakis and his group will entertain the participants with traditional Cretan music played by violin, Cretan lyra and lagotto. At the Appreciation Event, honoring the invited speakers and those who contributed to the organization of the minisymposia, Thanasis Polykandriotis' music group "OI EPOMENOI", which performed at the Opening Ceremony of the XXVIII Olympic Games "Athens 2004", will provide an anthology of Greek folk music based on the Bouzouki instrument. At the Congress Banquet, Cretan dancers will show their artistry in performing traditional folk dances of Crete which depict the brave heroism, dynamism and rebellious character of the Cretan people.



Welcome to Crete, the largest Greek island and the fifth largest in the Mediterranean. Crete has a very long and rich history during several thousand years to the past, and it is nowadays characterized by its high touristic appeal owed to the island's diverse landscape as well as its unique and colorful culture. Birthplace of Zeus according to mythology, and home of the Minoan civilization, Europe's first advanced civilization. Crete presents continuous and uninterrupted habitation since the Paleolithic era, as far back as 130,000 years ago.

The organizers of the ECCOMAS 2016 Congress would like to thank the authors for submitting their scientific contributions, the minisymposia organizers and the reviewers who with their diligent work contributed to the high scientific quality of the Congress. The technical support of the Erasmus Conferences Tours & Travel Agency in dealing with the travel arrangements of the participants and the contact with the Creta Maris Conference Centre, is greatly acknowledged.

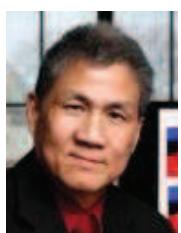
We invite you to enjoy both the scientific as well as the social programme of the ECCOMAS Congress 2016 and the island of Crete and to experience an unforgettable event.



Manolis Papadrakakis
Congress Chairman
President of GRACM

Greetings from the President of IACM

On behalf of the International Association for Computational Mechanics (IACM), we congratulate the Congress Chairperson Professor Manolis Papadrakakis, Past President of ECCOMAS, and the Congress Honorary Chairperson Professor Ekkehard Ramm, President of ECCOMAS, for their leadership in making this Congress a marvelous success! May this successful Congress to be held in Crete, Greece in June 5-10, 2016 set a standard that will lead also to many future successful ECCOMAS events.



Wing Kam Liu
President of IACM

PROGRAMME OVERVIEW

SUNDAY, JUNE 5

16:00-20:00	Registration										
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DAY 1 – MONDAY, JUNE 6

	7:30-8:30	8:30-10:00	10:00-10:30	10:30-12:00	12:00-14:00	14:00-16:00	16:00-16:30	16:30-18:30	19:00-21:00
Zeus East	Opening & Awards Ceremony PL 1 Registration Coffee Break	PL 2, 3	Lunch Break			CS 990 – 1 PARTICLE-BASED METHODS	Coffee Break	CS 990 – 2 PARTICLE-BASED METHODS	Reception
Zeus West						MS 609 – 1 ADVANCED COMPUTATIONAL MODELING OF BATTERIES AND FUEL CELLS		MS 609 – 2 ADVANCED COMPUTATIONAL MODELING OF BATTERIES AND FUEL CELLS	
Zeus North						MS 906 – 1 MATHEMATICAL ADVANCES IN ISOGEOMETRIC ANALYSIS		MS 906 – 2 MATHEMATICAL ADVANCES IN ISOGEOMETRIC ANALYSIS	
Minos East						MS 501 – 1 ALGORITHMIC ASPECTS OF HIGH-PERFORMANCE COMPUTING FOR MECHANICS AND PHYSICS		MS 501 – 2 ALGORITHMIC ASPECTS OF HIGH-PERFORMANCE COMPUTING FOR MECHANICS AND PHYSICS	
Minos North						MS 1101 – 1 REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES		MS 1101 – 2 REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES	
Minos South						MS 503 – 1 HPC-BASED SIMULATIONS FOR THE ENGINEERING REALM AND INDUSTRIAL APPLICATIONS		MS 503 – 2 HPC-BASED SIMULATIONS FOR THE ENGINEERING REALM AND INDUSTRIAL APPLICATIONS	
Danae						MS 304 COMPUTATIONAL MODELLING OF ADDITIVE PRODUCTION PROCESSES		MS 1001 – 1 STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION	
Europa						MS 914 – 1 INNOVATIVE NON-BOUNDARY-FITTED DISCRETIZATION METHODS		MS 914 – 2 INNOVATIVE NON-BOUNDARY-FITTED DISCRETIZATION METHODS	
Leda						MS 1005 MONITORING AND CONTROL OF STRUCTURES		MS 706 MODELING OF FIBER-BASED STRUCTURES - TEXTILES AND TEXTILE REINFORCED COMPOSITES	
Athena						MS 302 – 1 MESH GENERATION AND ADAPTION		MS 302 – 2 MESH GENERATION AND ADAPTION	
Artemis						MS 903 – 1 ADVANCES IN FICTITIOUS DOMAIN METHODS FOR SOLID MECHANICS		MS 903 – 2 ADVANCES IN FICTITIOUS DOMAIN METHODS FOR SOLID MECHANICS	
Aphrodite						MS 921 – 1 RECENT ADVANCES IN BOUNDARY ELEMENT METHODS		MS 921 – 2 RECENT ADVANCES IN BOUNDARY ELEMENT METHODS	
Antigoni						MS 1306 – 1 ERCOFTAC SIG-45: UNCERTAINTY QUANTIFICATION IN CFD AND FLUID STRUCTURE INTERACTION		MS 1306 – 2 ERCOFTAC SIG-45: UNCERTAINTY QUANTIFICATION IN CFD AND FLUID STRUCTURE INTERACTION	
Apollo East						MS 303 – 1 CURVED MESH GENERATION FOR HIGH-ORDER METHODS		MS 303 – 2 CURVED MESH GENERATION FOR HIGH-ORDER METHODS	
Apollo West						MS 1104 – 1 REDUCED-ORDER MODELS FOR PDE-CONSTRAINED OPTIMIZATION AND INVERSE PROBLEMS		MS 1104 – 2 REDUCED-ORDER MODELS FOR PDE-CONSTRAINED OPTIMIZATION AND INVERSE PROBLEMS	

DAY 1 – MONDAY, JUNE 6

	7:30-8:30	8:30-10:00	10:00-10:30	10:30-12:00	12:00-14:00	14:00-16:00	16:00-16:30	16:30-18:30	19:00-21:00
Room 1						MS 1307 – 1 NON-INTRUSIVE SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION IN HIGH DIMENSIONS		MS 1307 – 2 NON-INTRUSIVE SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION IN HIGH DIMENSIONS	
Room 2						CS 420 – 1 MULTI-PHASE AND CHEMICALLY REACTING FLOWS		MS 1309 – 1 SCALABLE MULTI-FIDELITY MODELING FOR DESIGN, UNCERTAINTY QUANTIFICATION, AND INVERSE PROBLEMS	
Room 3						MS 308 ADVANCES IN RAPID CAX		CS 420 – 2 MULTI-PHASE AND CHEMICALLY REACTING FLOWS	
Room 4						CS 210 NUMERICAL SIMULATION OF COMPOSITE MATERIALS		CS 211 CRACK PROPAGATION	
Room 5						CS 840 – 1 MULTI-SCALE COMPUTATIONAL METHODS FOR SOLIDS AND FLUIDS		CS 840 – 2 MULTI-SCALE COMPUTATIONAL METHODS FOR SOLIDS AND FLUIDS	
Room 7						CS 110 – 1 NUMERICAL MODELS IN BIOMECHANICS		CS 110 – 2 NUMERICAL MODELS IN BIOMECHANICS	
Room 8						MS 1218 STABILITY AND CONTROL OF FLEXIBLE STRUCTURES			
Room 9						CS 750 – 1 COMPUTATIONAL MODELING OF COMPOSITES		CS 750 – 2 COMPUTATIONAL MODELING OF COMPOSITES	
Room 10						MS 505 – 1 INTERACTIVE SIMULATIONS IN COMPUTATIONAL ENGINEERING		MS 505 – 2 INTERACTIVE SIMULATIONS IN COMPUTATIONAL ENGINEERING	
Room 11						MS 916 – 1 DIRECT METHODS FOR LIMIT STATES OF MATERIALS AND STRUCTURES		MS 916 – 2 DIRECT METHODS FOR LIMIT STATES OF MATERIALS AND STRUCTURES	
Room 12						MS 917 – 1 MESOSCOPIC METHODS FOR COMPLEX FLUIDS AND SOFT MATTER		MS 917 – 2 MESOSCOPIC METHODS FOR COMPLEX FLUIDS AND SOFT MATTER	
Room 15						CS 930 – 1 HIGH-ORDER DISCRETIZATION METHODS		CS 930 – 2 HIGH-ORDER DISCRETIZATION METHODS	
Room 17						CS 1020 – 1 EVOLUTIONARY AND DETERMINISTIC METHODS FOR DESIGN, OPTIMIZATION AND CONTROL		CS 1020 – 2 EVOLUTIONARY AND DETERMINISTIC METHODS FOR DESIGN, OPTIMIZATION AND CONTROL	
Room 18						CS 751 – 1 SMART MATERIALS AND STRUCTURES		CS 751 – 2 SMART MATERIALS AND STRUCTURES	
Room 20						CS 230 DYNAMIC FAILURE AND FRACTURE			
Room 21						CS 1010 – 1 COMPUTATIONAL INVERSE PROBLEMS AND OPTIMIZATION		CS 1010 – 2 COMPUTATIONAL INVERSE PROBLEMS AND OPTIMIZATION	
Room 22						MS 902 – 1 INNOVATIVE NUMERICAL APPROACHES FOR MULTI-PHYSICS PROBLEMS		MS 902 – 2 INNOVATIVE NUMERICAL APPROACHES FOR MULTI-PHYSICS PROBLEMS	
Room 23						MS 913 – 1 HIGH-ORDER METHODS FOR POLYGONAL AND POLYHEDRAL MESHES		MS 913 – 2 HIGH-ORDER METHODS FOR POLYGONAL AND POLYHEDRAL MESHES	

DAY 2 – TUESDAY, JUNE 7

	8:30-10:30	10:30-11:00	11:00-13:00	13:00-14:30	14:30-16:30	16:30-17:00	17:00-19:00
Zeus East	MS 913 – 3 HIGH-ORDER METHODS FOR POLYGONAL AND POLYHEDRAL MESHES		SPL 1, 2, 3		MS 105 – 1 SIMULATION OF CARDIOVASCULAR PROCEDURES AND DEVICES		MS 105 – 2 SIMULATION OF CARDIOVASCULAR PROCEDURES AND DEVICES
Zeus West	MS 609 – 3 ADVANCED COMPUTATIONAL MODELING OF BATTERIES AND FUEL CELLS		SPL 4, 5, 6		MS 112 – 1 ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBILOGY		MS 112 – 2 ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBILOGY
Zeus North	MS 906 – 3 MATHEMATICAL ADVANCES IN ISOGEOMETRIC ANALYSIS		SPL 7, 8, 9		MS 901 – 1 ISOGEOMETRIC METHODS		MS 901 – 2 ISOGEOMETRIC METHODS
Minos East	MS 501 – 3 ALGORITHMIC ASPECTS OF HIGH-PERFORMANCE COMPUTING FOR MECHANICS AND PHYSICS		SPL 10, 11, 12		MS 501 – 4 ALGORITHMIC ASPECTS OF HIGH-PERFORMANCE COMPUTING FOR MECHANICS AND PHYSICS		MS 501 – 5 ALGORITHMIC ASPECTS OF HIGH-PERFORMANCE COMPUTING FOR MECHANICS AND PHYSICS
Minos North	MS 301 – 1 METHODS FOR CUT AND COMPOSITE MESHES: THEORY, ALGORITHMS AND APPLICATIONS				MS 301 – 2 METHODS FOR CUT AND COMPOSITE MESHES: THEORY, ALGORITHMS AND APPLICATIONS		MS 301 – 3 METHODS FOR CUT AND COMPOSITE MESHES: THEORY, ALGORITHMS AND APPLICATIONS
Minos South	MS 503 – 3 HPC-BASED SIMULATIONS FOR THE ENGINEERING REALM AND INDUSTRIAL APPLICATIONS				MS 503 – 4 HPC-BASED SIMULATIONS FOR THE ENGINEERING REALM AND INDUSTRIAL APPLICATIONS		CS 500 – 1 HIGH PERFORMANCE COMPUTING
Danae	MS 1001 – 2 STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION				MS 1001 – 3 STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION		MS 1001 – 4 STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION
Europa	CS 410 – 1 COMPUTATIONAL FLUID MECHANICS				CS 410 – 2 COMPUTATIONAL FLUID MECHANICS		CS 410 – 3 COMPUTATIONAL FLUID MECHANICS
Leda	MS 1101 – 3 REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES				MS 1101 – 4 REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES		MS 1101 – 5 REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES
Athena	MS 703 – 1 COMPUTATIONAL MECHANICS OF WOOD MATERIALS AND TIMBER STRUCTURES				MS 703 – 2 COMPUTATIONAL MECHANICS OF WOOD MATERIALS AND TIMBER STRUCTURES		MS 703 – 3 COMPUTATIONAL MECHANICS OF WOOD MATERIALS AND TIMBER STRUCTURES
Artemis	MS 903 – 3 ADVANCES IN FICTION DOMAIN METHODS FOR SOLID MECHANICS				MS 113 – 1 MATHEMATICAL AND NUMERICAL MODELING OF THE HEART		MS 113 – 2 MATHEMATICAL AND NUMERICAL MODELING OF THE HEART
Aphrodite	MS 921 – 3 RECENT ADVANCES IN BOUNDARY ELEMENT METHODS				MS 104 - 1 GROWTH AND REMODELLING OF LIVING TISSUES IN EXPERIMENT AND SIMULATION		MS 104 – 2 GROWTH AND REMODELLING OF LIVING TISSUES IN EXPERIMENT AND SIMULATION
Antigoni	MS 806 – 1 MULTISCALE MODELLING OF MATERIALS AND STRUCTURES				MS 806 – 2 MULTISCALE MODELLING OF MATERIALS AND STRUCTURES		MS 806 – 3 MULTISCALE MODELLING OF MATERIALS AND STRUCTURES
Apollo East	MS 106 – 1 DIRECT AND INVERSE METHODS FOR CARDIOVASCULAR AND PULMONARY BIOMECHANICS				MS 801 – 1 MULTISCALE COMPUTATIONAL HOMOGENIZATION FOR BRIDGING SCALES IN THE MECHANICS AND PHYSICS OF COMPLEX MATERIALS		MS 801 – 2 MULTISCALE COMPUTATIONAL HOMOGENIZATION FOR BRIDGING SCALES IN THE MECHANICS AND PHYSICS OF COMPLEX MATERIALS
Apollo West	MS 919 – 1 RECENT ADVANCES IN NUMERICAL SIMULATION AND ANALYSIS OF KINETIC MODELS				MS 919 – 2 RECENT ADVANCES IN NUMERICAL SIMULATION AND ANALYSIS OF KINETIC MODELS		MS 919 – 3 RECENT ADVANCES IN NUMERICAL SIMULATION AND ANALYSIS OF KINETIC MODELS
Room 1	MS 1202 – 1 ADVANCED BEAM MODELS				MS 1202 – 2 ADVANCED BEAM MODELS		MS 1202 – 3 ADVANCED BEAM MODELS
Room 2	CS 420 – 3 MULTI-PHASE AND CHEMICALLY REACTING FLOWS				MS 305 – 1 ADVANCED MESHING METHODS FOR INDUSTRIAL APPLICATIONS		MS 305 – 2 ADVANCED MESHING METHODS FOR INDUSTRIAL APPLICATIONS

DAY 2 – TUESDAY, JUNE 7

	8:30-10:30	10:30-11:00	11:00-13:00	13:00-14:30	14:30-16:30	16:30-17:00	17:00-19:00
Room 3	MS 306 LATTICE SPRING METHODS FOR LINEAR AND NONLINEAR CONTINUA				MS 1301 THE STOCHASTIC COMPUTER METHODS IN MECHANICS		STS 1 THE CAERO2 PLATFORM: DISSEMINATION OF COMPUTATIONAL CASE STUDIES IN AERONAUTICS
Room 4	CS 212 – 1 NUMERICAL MODELING OF DAMAGE, FAILURE AND FRACTURE				CS 212 – 2 NUMERICAL MODELING OF DAMAGE, FAILURE AND FRACTURE		CS 212 – 3 NUMERICAL MODELING OF DAMAGE, FAILURE AND FRACTURE
Room 5	CS 460 – 1 UNSTEADY FLOW COMPUTATION				CS 460 – 2 UNSTEADY FLOW COMPUTATION		CS 460 – 3 UNSTEADY FLOW COMPUTATION
Room 7	MS 1214 – 1 HISTORIC MASONRY STRUCTURES: MODELLING, ASSESSMENT & RETROFIT				MS 1214 – 2 HISTORIC MASONRY STRUCTURES: MODELLING, ASSESSMENT & RETROFIT		MS 1214 – 3 HISTORIC MASONRY STRUCTURES: MODELLING, ASSESSMENT & RETROFIT
Room 8	CS 110 – 3 NUMERICAL MODELS IN BIOMECHANICS				CS 110 – 4 NUMERICAL MODELS IN BIOMECHANICS		CS 110 – 5 NUMERICAL MODELS IN BIOMECHANICS
Room 9	CS 750 – 3 COMPUTATIONAL MODELING OF COMPOSITES				MS 415 COMPUTATIONAL NON-NEWTONIAN FLUID MECHANICS		MS 1217 – 1 COMPUTATIONAL METHODS IN EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS
Room 10	CS 1200 – 1 STRUCTURAL DYNAMICS				MS 1212 – 1 DYNAMICS AND SEISMIC RESPONSE OF ROCKING AND SELF-CENTERING STRUCTURES		MS 1212 – 2 DYNAMICS AND SEISMIC RESPONSE OF ROCKING AND SELF-CENTERING STRUCTURES
Room 11	MS 1309 – 2 SCALABLE MULTI-FIDELITY MODELING FOR DESIGN, UNCERTAINTY QUANTIFICATION, AND INVERSE PROBLEMS	MS 1310 COMPUTATIONAL METHODS FOR THE SOLUTION OF STOCHASTIC DIFFERENTIAL EQUATIONS			CS 1200 – 2 STRUCTURAL DYNAMICS		CS 1201 COMPUTATIONAL SOIL MECHANICS
Room 12	MS 1206 – 1 ADVANCES IN NUMERICAL METHODS FOR LINEAR AND NON-LINEAR DYNAMICS AND WAVE PROPAGATION				MS 1206 – 2 ADVANCES IN NUMERICAL METHODS FOR LINEAR AND NON-LINEAR DYNAMICS AND WAVE PROPAGATION		MS 1206 – 3 ADVANCES IN NUMERICAL METHODS FOR LINEAR AND NON-LINEAR DYNAMICS AND WAVE PROPAGATION
Room 15	CS 930 – 3 HIGH-ORDER DISCRETIZATION METHODS						CS 930 – 4 HIGH-ORDER DISCRETIZATION METHODS
Room 17	CS 1020 – 3 EVOLUTIONARY AND DETERMINISTIC METHODS FOR DESIGN, OPTIMIZATION AND CONTROL				CS 1010 – 4 COMPUTATIONAL INVERSE PROBLEMS AND OPTIMIZATION		CS 1300 – 1 UNCERTAINTY QUANTIFICATION AND ERROR ESTIMATION
Room 18	STS 2 – 1 GREEN AND SMART INTELLIGENT TRANSPORT SYSTEMS (IST): TOWARDS MORE INTEGRATED COMPUTATIONAL AND IT TOOLS FOR THE DEPLOYMENT OF NOVEL TRAVEL SERVICES				STS 2 – 2 GREEN AND SMART INTELLIGENT TRANSPORT SYSTEMS (IST): TOWARDS MORE INTEGRATED COMPUTATIONAL AND IT TOOLS FOR THE DEPLOYMENT OF NOVEL TRAVEL SERVICES		MS 1007 – 1 ADDITIVE MANUFACTURING AND OPTIMIZATION
Room 20	MS 115 – 1 TUMOR GROWTH MODELING AND THE MECHANICAL ASPECTS OF CANCER				MS 115 – 2 TUMOR GROWTH MODELING AND THE MECHANICAL ASPECTS OF CANCER	MS 111 POPULATION BALANCE MODELING: CURRENT STATUS, FUTURE PROSPECTS AND NOVEL APPLICATIONS FROM NANOPARTICLES' SYNTHESIS TO (LUNG) CANCER	MS 116 MULTISCALE & MULTILEVEL MODELING IN DETOXIFYING ORGANS AND ORGANS OF THE DIGESTIVE TRACT
Room 21	CS 1010 – 3 COMPUTATIONAL INVERSE PROBLEMS AND OPTIMIZATION				MS 404 – 1 SIMULATION OF ENVIRONMENTAL FLOWS		MS 404 – 2 SIMULATION OF ENVIRONMENTAL FLOWS
Room 22	CS 940 – 1 EXTENDED DISCRETIZATION METHODS				CS 940 – 2 EXTENDED DISCRETIZATION METHODS	CS 960 – 1 MESHLESS METHODS	CS 960 – 2 MESHLESS METHODS
Room 23	MS 1305 STOCHASTIC MODELS OF FAILURE IN RANDOM HETEROGENEOUS MATERIALS AND COMPLEX NETWORKS				MS 1009 – 1 ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION		

DAY 3 – WEDNESDAY, JUNE 8

	8:30-10:30	10:30-11:00	11:00-13:00	13:00-14:30	14:30-16:45	16:45-17:15	17:15-19:15
Zeus East	MS 106 – 2 DIRECT AND INVERSE METHODS FOR CARDIOVASCULAR AND PULMONARY BIOMECHANICS		MS 106 – 3 DIRECT AND INVERSE METHODS FOR CARDIOVASCULAR AND PULMONARY BIOMECHANICS				
Zeus West	MS 112 – 3 ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBIOLOGY		MS 112 – 4 ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBIOLOGY				MS 113 – 4 MATHEMATICAL AND NUMERICAL MODELING OF THE HEART
Zeus North	MS 901 – 3 ISOGEOMETRIC METHODS		MS 901 – 4 ISOGEOMETRIC METHODS				MS 901 – 5 ISOGEOMETRIC METHODS
Minos East	MS 1101 – 6 REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES		MS 1101 – 7 REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES				MS 602 – 1 INNOVATIVE METHODS FOR FLUID-STRUCTURE-INTERACTION
Minos North	MS 301 – 4 METHODS FOR CUT AND COMPOSITE MESHES: THEORY, ALGORITHMS AND APPLICATIONS		MS 403 – 1 PARTICLE-BASED METHODS IN FLUID MECHANICS				STS 5 TRANSITION LOCATION EFFECT ON SHOCK WAVE BOUNDARY LAYER INTERACTION
Minos South	CS 500 – 2 HIGH PERFORMANCE COMPUTING		MS 408 – 1 MANIPULATION AND CONTROL OF TURBULENT FLOW CS 310 CAD, CAM AND CAE				MS 112 – 5 ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBIOLOGY
Danae	MS 923 – 1 NOVEL DISCRETIZATION METHODS – MATHEMATICAL AND MECHANICAL ASPECTS		MS 923 – 2 NOVEL DISCRETIZATION METHODS – MATHEMATICAL AND MECHANICAL ASPECTS				MS 923 – 3 NOVEL DISCRETIZATION METHODS – MATHEMATICAL AND MECHANICAL ASPECTS
Europa	MS 714 – 1 STRENGTH, FATIGUE AND STABILITY OF COMPOSITE STRUCTURES		MS 714 – 2 STRENGTH, FATIGUE AND STABILITY OF COMPOSITE STRUCTURES				CS 630 – 1 SIMULATION OF FLUID-STRUCTURE INTERACTION
Leda	MS 1001 – 5 STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION		MS 1001 – 6 STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION				MS 1001 – 7 STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION
Athena	MS 504 – 1 NUMERICAL METHODS AND TOOLS FOR KEY EXASCALE COMPUTING CHALLENGES IN ENGINEERING AND APPLIED SCIENCES		MS 504 – 2 NUMERICAL METHODS AND TOOLS FOR KEY EXASCALE COMPUTING CHALLENGES IN ENGINEERING AND APPLIED SCIENCES	MS 810 CONSIDERING THE VERY SMALL SCALES IN COMPUTATIONAL MECHANICS: ATOMISTIC AND QUANTUM MECHANICS-BASED METHODS			MS 1102 VERIFICATION OF REDUCED MODELS IN COMPUTATIONAL MECHANICS
Artemis	MS 113 – 3 MATHEMATICAL AND NUMERICAL MODELING OF THE HEART		CS 830 COMPUTATIONAL NANOTECHNOLOGY				MS 405 COMPUTATIONAL MODELING OF MULTIPHASE FLOWS: ADVANCED METHODS, INTERFACE PHENOMENA AND ENVIRONMENTAL APPLICATIONS
Aphrodite	MS 103 – 1 MECHANICS OF BIOLOGICAL TISSUES		MS 103 – 2 MECHANICS OF BIOLOGICAL TISSUES				MS 103 – 3 MECHANICS OF BIOLOGICAL TISSUES
Antigoni	MS 806 – 4 MULTISCALE MODELLING OF MATERIALS AND STRUCTURES		MS 806 – 5 MULTISCALE MODELLING OF MATERIALS AND STRUCTURES				MS 801 – 5 MULTISCALE COMPUTATIONAL HOMOGENIZATION FOR BRIDGING SCALES IN THE MECHANICS AND PHYSICS OF COMPLEX MATERIALS
Apollo East	MS 801 – 3 MULTISCALE COMPUTATIONAL HOMOGENIZATION FOR BRIDGING SCALES IN THE MECHANICS AND PHYSICS OF COMPLEX MATERIALS		MS 801 – 4 MULTISCALE COMPUTATIONAL HOMOGENIZATION FOR BRIDGING SCALES IN THE MECHANICS AND PHYSICS OF COMPLEX MATERIALS				CS 450 – 2 NUMERICAL METHODS AND CONVERGENCE ACCELERATION IN CFD
Apollo West	MS 1308 MODELLING AND INVERSE METHODS IN NONLINEAR DYNAMICAL SYSTEMS		CS 450 – 1 NUMERICAL METHODS AND CONVERGENCE ACCELERATION IN CFD				MS 1002 EVOLUTIONARY ALGORITHMS AND METAHEURISTICS IN CIVIL ENGINEERING AND CONSTRUCTION MANAGEMENT
Room 1	MS 409 – 1 CURRENT TRENDS IN MODELLING AND SIMULATION OF TURBULENT FLOWS		MS 409 – 2 CURRENT TRENDS IN MODELLING AND SIMULATION OF TURBULENT FLOWS				

DAY 3 – WEDNESDAY, JUNE 8

	8:30-10:30	10:30-11:00	11:00-13:00	13:00-14:30	14:30-16:45	16:45-17:15	17:15-19:15
Room 2	STS 3 – 1 INNOVATIVE DESIGN OPTIMIZATION TOOLS LINKED TO INDUSTRIAL AERONAUTICAL APPLICATIONS: TARGETING GREENER PERFORMANCES		STS 3 – 2 INNOVATIVE DESIGN OPTIMIZATION TOOLS LINKED TO INDUSTRIAL AERONAUTICAL APPLICATIONS: TARGETING GREENER PERFORMANCES				MS 406 ADVANCES IN COMPUTATIONAL METHODS FOR GAS-LIQUID TWO-PHASE FLOW
Room 3	MS 1207 COMPUTATIONAL SIMULATION OF SMART STRUCTURES AND MATERIALS		MS 1203 THE MODELS AND INVESTIGATIONS METHODS OF DYNAMICS OF THE SOLIDS SYSTEMS WITH DRY FRICTION				MS 1006 PARAMETER IDENTIFICATION IN SOLID MECHANICS
Room 4	CS 110 – 6 NUMERICAL MODELS IN BIOMECHANICS		CS 1200 - 3 STRUCTURAL DYNAMICS				MS 408 – 2 MANIPULATION AND CONTROL OF TURBULENT FLOW
Room 5	CS 410 – 4 COMPUTATIONAL FLUID MECHANICS		CS 410 – 5 COMPUTATIONAL FLUID MECHANICS				CS 410 – 6 COMPUTATIONAL FLUID MECHANICS
Room 7	MS 114 COMPUTER MODELING OF BALANCE AND HEARING DISORDERS		CS 720 – 1 COMPUTATIONAL MATERIALS SCIENCE				CS 720 – 2 COMPUTATIONAL MATERIALS SCIENCE
Room 8	MS 613 COMPUTATIONAL STRATEGIES FOR THE SIMULATION OF TURBULENT TRANSPORT AND MIXING IN THE NATURAL ENVIRONMENT		MS 1201 – 1 COMPUTATIONAL STRUCTURAL DYNAMICS				MS 1201 – 2 COMPUTATIONAL STRUCTURAL DYNAMICS
Room 9	MS 1217 – 2 COMPUTATIONAL METHODS IN EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS		MS 1217 – 3 COMPUTATIONAL METHODS IN EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS				MS 203 COMPUTATIONAL METHODS FOR MODELLING INSTABILITIES IN SOLIDS & STRUCTURES
Room 10	MS 1220 DYNAMICS OF STRUCTURES SUBJECT TO SEISMIC EXCITATIONS		MS 414 – 1 NEW TRENDS IN NUMERICAL METHODS FOR MULTI-MATERIAL COMPRESSIBLE FLUID FLOWS				MS 414 – 2 NEW TRENDS IN NUMERICAL METHODS FOR MULTI-MATERIAL COMPRESSIBLE FLUID FLOWS
Room 11	MS 410 – 1 COMPLEX FLUID FLOWS IN ENGINEERING: MODELLING, SIMULATION AND OPTIMIZATION		MS 410 – 2 COMPLEX FLUID FLOWS IN ENGINEERING: MODELLING, SIMULATION AND OPTIMIZATION				MS 410 – 3 COMPLEX FLUID FLOWS IN ENGINEERING: MODELLING, SIMULATION AND OPTIMIZATION
Room 12	MS 601 SHOCK WAVE-BOUNDARY LAYER INTERACTION AND ITS CONTROL		MS 1003 – 1 ADVANCES IN DESIGN OPTIMIZATION OF STRUCTURES AND MATERIALS				MS 1003 – 2 ADVANCES IN DESIGN OPTIMIZATION OF STRUCTURES AND MATERIALS
Room 15	MS 307 ADVANCES IN FINITE ELEMENT METHODS FOR TETRAHEDRAL MESH COMPUTATIONS		MS 905 – 1 DISCONTINUOUS GALERKIN METHODS: NEW TRENDS AND APPLICATIONS				MS 804 – 1 MULTISCALE AND COMPUTATIONAL APPROACHES TO FRACTURE AND FAILURE
Room 17	CS 1300 – 2 UNCERTAINTY QUANTIFICATION AND ERROR ESTIMATION		CS 1300 – 3 UNCERTAINTY QUANTIFICATION AND ERROR ESTIMATION	MS 1222 INFLUENCE OF LIQUEFiable SOIL ON SINGLE AND CLOSELY CLUSTERED STRUCTURES			
Room 18	MS 1007 – 2 ADDITIVE MANUFACTURING AND OPTIMIZATION		MS 1007 – 3 ADDITIVE MANUFACTURING AND OPTIMIZATION				MS 1007 – 4 ADDITIVE MANUFACTURING AND OPTIMIZATION
Room 20	MS 907 – 1 REGULARIZED ENRICHED APPROXIMATIONS AND QUADRATURE FOR DISCONTINUITIES, SINGULARITIES AND CONTINUOUS-DISCONTINUOUS TRANSITION		MS 907 – 2 REGULARIZED ENRICHED APPROXIMATIONS AND QUADRATURE FOR DISCONTINUITIES, SINGULARITIES AND CONTINUOUS-DISCONTINUOUS TRANSITION				MS 907 – 3 REGULARIZED ENRICHED APPROXIMATIONS AND QUADRATURE FOR DISCONTINUITIES, SINGULARITIES AND CONTINUOUS-DISCONTINUOUS TRANSITION
Room 21	MS 404 – 3 SIMULATION OF ENVIRONMENTAL FLOWS		MS 404 – 4 SIMULATION OF ENVIRONMENTAL FLOWS				MS 110 COMPUTATIONAL BONE MECHANICS
Room 22	Olympiad - 1		Olympiad - 2				
Room 23	MS 1009 – 2 ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION		MS 1009 – 3 ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION				MS 1009 – 4 ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION

DAY 4 – THURSDAY, JUNE 9

	8:30-10:30	10:30-11:00	11:00-13:00	13:00-14:30	14:30-16:30	16:30-17:00	17:00-19:00	20:30-23:30
Zeus East	MS 403 – 2 PARTICLE-BASED METHODS IN FLUID MECHANICS		SPL 13, 14, 15		MS 403 – 3 PARTICLE-BASED METHODS IN FLUID MECHANICS			
Zeus West	MS 1007 – 5 ADDITIVE MANUFACTURING AND OPTIMIZATION		SPL 16, 17, 18		MS 708 INNOVATIVE SOLUTIONS FOR THE SEISMIC PROTECTION OF INDUSTRIAL BUILDINGS	MS 807 ADVANCED COMPUTATIONAL STRATEGIES FOR MODELLING, SIMULATION AND CHARACTERISATION OF MULTI-SCALE HETEROGENEOUS MATERIALS		
Zeus North	MS 901 – 6 ISOGEOMETRIC METHODS		SPL 19, 20		MS 901 – 7 ISOGEOMETRIC METHODS			
Minos East	MS 602 – 2 INNOVATIVE METHODS FOR FLUID-STRUCTURE-INTERACTION		SPL 21, 22, 23		MS 602 – 3 INNOVATIVE METHODS FOR FLUID-STRUCTURE-INTERACTION			
Minos North	STS 6 DRAG REDUCTION AND FLOW CONTROL TECHNOLOGIES		SPL 24, 25, 26		MS 614 – 1 YOUNG INVESTIGATORS MINISYMPOSIUM			
Minos South	MS 112 – 6 ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBILOGY				MS 1204 – 1 NONLINEAR DYNAMICS OF ROTATING STRUCTURES			
Danae					MS 108 – 1 NUMERICAL METHODS FOR COUPLED PROBLEMS IN BIOMEDICAL APPLICATIONS			
Europa	CS 630 – 2 SIMULATION OF FLUID-STRUCTURE INTERACTION				CS 630 – 3 SIMULATION OF FLUID-STRUCTURE INTERACTION			
Leda	MS 904 – 1 ADVANCED MINIMIMAL RESIDUAL DISCRETIZATION				MS 904 – 2 ADVANCED MINIMIMAL RESIDUAL DISCRETIZATION			
Athena	MS 1401 – 1 TOICA: THERMAL OVERALL INTEGRATED CONCEPT AIRCRAFT				MS 1401 – 2 TOICA: THERMAL OVERALL INTEGRATED CONCEPT AIRCRAFT			
Artemis	MS 1210 ADVANCES IN MODELING AND ANALYSIS OF FGM STRUCTURES				STS 7 MORPHING TECHNOLOGIES FOR AIRCRAFT WINGS	STS 8 SIMULATION AND VALIDATION OF COMPOSITE STRUCTURES IN AERONAUTICS		
Aphrodite	MS 103 – 4 MECHANICS OF BIOLOGICAL TISSUES				MS 102 – 1 COMPUTATIONAL MODELS IN BIOMECHANICS AND MECHANOBILOGY			
Antigoni	MS 201 – 1 MICROSTRUCTURE-DRIVEN DEFORMATION AND FAILURE IN CRYSTALLINE MATERIALS				MS 201 – 2 MICROSTRUCTURE-DRIVEN DEFORMATION AND FAILURE IN CRYSTALLINE MATERIALS			
Apollo East	MS 711 – 1 FOURIER-BASED METHODS FOR COMPUTING THE BEHAVIOR OF HETEROGENEOUS MATERIALS DEVELOPMENTS, EXTENSIONS AND APPLICATIONS				MS 711 – 2 FOURIER-BASED METHODS FOR COMPUTING THE BEHAVIOR OF HETEROGENEOUS MATERIALS DEVELOPMENTS, EXTENSIONS AND APPLICATIONS			
Apollo West	MS 204 – 1 IMPACT AND CRASH MECHANICS				MS 204 – 2 IMPACT AND CRASH MECHANICS			
Room 1	MS 702 MODELING OF NANOFILLED COMPOSITES				MS 412 NUMERICAL METHODS FOR WAVES AND FLOWS IN COASTAL AND DEEP WATER HYDRODYNAMICS	MS 615 COMPUTATIONAL MODELS IN MAGNETOHYDRODYNAMICS		

DAY 4 – THURSDAY, JUNE 9

	8:30-10:30	10:30-11:00	11:00-13:00	13:00-14:30	14:30-16:30	16:30-17:00	17:00-19:00	20:30-23:30
Room 2	MS 1208 BIFURCATIONS AND STABILITY				MS 413 – 1 COMPUTATIONAL METHODS IN ENVIRONMENTAL FLUID MECHANICS		MS 413 – 2 COMPUTATIONAL METHODS IN ENVIRONMENTAL FLUID MECHANICS	
Room 3	MS 409 – 3 CURRENT TRENDS IN MODELLING AND SIMULATION OF TURBULENT FLOWS				MS 603 – 1 COMPUTATIONAL METHODS IN FLUID-STRUCTURE INTERACTION WITH IMPACT ON INDUSTRIAL APPLICATIONS		MS 603 – 2 COMPUTATIONAL METHODS IN FLUID-STRUCTURE INTERACTION WITH IMPACT ON INDUSTRIAL APPLICATIONS	
Room 4	MS 701 – 1 ADVANCED MATERIALS: COMPUTATIONAL ANALYSIS OF PROPERTIES AND PERFORMANCE				MS 701 – 2 ADVANCED MATERIALS: COMPUTATIONAL ANALYSIS OF PROPERTIES AND PERFORMANCE		CS 320 GRID GENERATION AND ADAPTIVE TECHNIQUES	
Room 5	MS 911 – 1 NUMERICAL METHODS IN THE MECHANICS OF GENERALIZED CONTINUA				MS 911 – 2 NUMERICAL METHODS IN THE MECHANICS OF GENERALIZED CONTINUA	MS 912 – 1 HIGH-ORDER METHODS, SENSITIVITY ANALYSIS AND ADAPTATION FOR THE NAVIER STOKES EQUATIONS	MS 912 – 2 HIGH-ORDER METHODS, SENSITIVITY ANALYSIS AND ADAPTATION FOR THE NAVIER STOKES EQUATIONS	
Room 7	MS 608 ADVANCES IN TIME INTEGRATION FOR SOLID, FLUID AND COUPLED SYSTEMS				MS 1225 – 1 SEISMIC PERFORMANCE ASSESSMENT OF STRUCTURES AND SEISMIC RISK MITIGATION STRATEGIES		MS 1225 – 2 SEISMIC PERFORMANCE ASSESSMENT OF STRUCTURES AND SEISMIC RISK MITIGATION STRATEGIES	MS 1213 INNOVATIVE STRUCTURAL SYSTEMS FOR SEISMIC RESISTANT BUILDINGS
Room 8	MS 109 – 1 ADVANCED ANALYSIS OF MATERIALS & STRUCTURAL SOLUTIONS IN SAFETY & BIOMECHANICS				MS 109 – 2 ADVANCED ANALYSIS OF MATERIALS & STRUCTURAL SOLUTIONS IN SAFETY & BIOMECHANICS		MS 1304 – 1 STOCHASTIC MODELING AND IDENTIFICATION OF UNCERTAINTIES IN COMPUTATIONAL MECHANICS	
Room 9	MS 709 INTEGRATED COMPUTATIONAL MATERIALS ENGINEERING - ICME				MS 705 IDENTIFICATION OF MATERIAL MODELS		MS 605 FRICTIONAL CONTACTS WITH LUBRICATION – BASICS AND APPLICATIONS	
Room 10	MS 710 MODELING OF INTERFACE BEHAVIOR IN COMPOSITES				MS 715 – 1 COMPUTATIONAL ANALYSIS OF COMPOSITE STRUCTURES		MS 715 – 2 COMPUTATIONAL ANALYSIS OF COMPOSITE STRUCTURES	
Room 11	MS 918 COMPUTER ALGEBRA SYSTEMS IN MODELLING STATIC AND DYNAMIC PROBLEMS IN MECHANICS OF SOLIDS				MS 712 – 1 SMART MATERIAL SYSTEMS AND STRUCTURES		MS 712 – 2 SMART MATERIAL SYSTEMS AND STRUCTURES	
Room 12	MS 1003 - 3 ADVANCES IN DESIGN OPTIMIZATION OF STRUCTURES AND MATERIALS				MS 612 NUMERICAL SIMULATIONS FOR SMART-CITY APPLICATIONS		MS 611 ADVANCES IN IMMersed METHODS IN FSI PROBLEMS	
Room 15	CS 620 – 1 COMPUTATIONAL CONTACT MECHANICS				CS 620 – 2 COMPUTATIONAL CONTACT MECHANICS		MS 1004 AERODYNAMIC STRATEGIES FOR THE GLOBAL OPTIMIZATION OF FLYING CONFIGURATIONS IN SUPERSONIC FLOW	
Room 17	CS 1100 REDUCTION ORDER METHODS				MS 811 MULTISCALE MODELING OF CONCRETE AND CONCRETE STRUCTURES		MS 1221 COMPUTATIONAL STRUCTURAL STABILITY	
Room 18	MS 607 – 1 ADVANCES IN COMPUTATIONAL METHODS FOR LIQUID-VAPOR FLOWS WITH PHASE TRANSFER PROCESSES				MS 607 – 2 ADVANCES IN COMPUTATIONAL METHODS FOR LIQUID-VAPOR FLOWS WITH PHASE TRANSFER PROCESSES		MS 809 MULTISCALE STOCHASTIC FINITE ELEMENT METHODS	
Room 20	MS 905 – 2 DISCONTINUOUS GALERKIN METHODS: NEW TRENDS AND APPLICATIONS				MS 905 – 3 DISCONTINUOUS GALERKIN METHODS: NEW TRENDS AND APPLICATIONS		MS 905 – 4 DISCONTINUOUS GALERKIN METHODS: NEW TRENDS AND APPLICATIONS	
Room 21	MS 1215 – 1 NONLINEAR VIBRATIONS OF CONSERVATIVE AND NONCONSERVATIVE SYSTEMS: PHENOMENA AND ADVANCED NUMERICAL METHODS				MS 1215 – 2 NONLINEAR VIBRATIONS OF CONSERVATIVE AND NONCONSERVATIVE SYSTEMS: PHENOMENA AND ADVANCED NUMERICAL METHODS		MS 910 – 1 HIGH ORDER CFD METHODS: CONCLUSIONS AND OUTLOOK	
Room 22	MS 1224 INNOVATIVE SOLUTIONS FOR THE SEISMIC PROTECTION OF INDUSTRIAL BUILDINGS				MS 1103 – 1 MATHEMATICAL SURROGATE MODELLING IN ELECTROMAGNETICS		MS 1103 – 2 MATHEMATICAL SURROGATE MODELLING IN ELECTROMAGNETICS	
Room 23	MS 1009 – 5 ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION				MS 1009 – 6 ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION		MS 1009 – 7 ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION	

DAY 5 – FRIDAY, JUNE 10

	9:00-11:00	11:00-11:30	11:30-13:30	13:30-14:30	14:30-16:30
Zeus East	MS 403 – 5 PARTICLE-BASED METHODS IN FLUID MECHANICS				PL 7 PL 8
Zeus West					Closing Ceremony
Zeus North					
Minos East	MS 602 – 4 INNOVATIVE METHODS FOR FLUID-STRUCTURE-INTERACTION		MS 602 – 5 INNOVATIVE METHODS FOR FLUID-STRUCTURE-INTERACTION		
Minos North	MS 922 – 1 HIGH-ORDER METHODS FOR ELASTIC WAVES AND THEIR APPLICATION		MS 922 – 2 HIGH-ORDER METHODS FOR ELASTIC WAVES AND THEIR APPLICATION MS 1008 ULTRASONIC GUIDED WAVES TESTING AND MONITORING		
Minos South					
Danae					
Europa	CS 630 – 5 SIMULATION OF FLUID-STRUCTURE INTERACTION MS 411 NON-NEWTONIAN HEAT AND FLUID FLOW SUBJECTED TO MAGNETIC FORCES				
Leda	MS 202 – 2 CIVIL ENGINEERING MATERIALS AND STRUCTURES UNDER EXTREME LOADINGS				
Athena	MS 606 – 2 COMPUTATIONAL MODELING OF HYDRAULIC FRACTURING		MS 606 – 3 COMPUTATIONAL MODELING OF HYDRAULIC FRACTURING		
Artemis					
Aphrodite	MS 805 – 1 ADVANCED MULTI-PHYSICS AND MULTI-SCALE TECHNIQUES FOR MODELING INELASTIC PROCESSES IN SOLIDS: DAMAGE, FRACTURE AND CONTACT MECHANICS		MS 805 – 2 ADVANCED MULTI-PHYSICS AND MULTI-SCALE TECHNIQUES FOR MODELING INELASTIC PROCESSES IN SOLIDS: DAMAGE, FRACTURE AND CONTACT MECHANICS		
Antigoni	MS 201 – 4 MICROSTRUCTURE-DRIVEN DEFORMATION AND FAILURE IN CRYSTALLINE MATERIALS				
Apollo East	MS 713 – 1 MICROSTRUCTURE-BASED MODELLING OF HETEROGENEOUS MATERIALS		MS 713 – 2 MICROSTRUCTURE-BASED MODELLING OF HETEROGENEOUS MATERIALS		
Apollo West	MS 205 PROBABILISTIC APPROACH TO NUMERICAL SIMULATION OF FRACTURE		MS 610 AERO-ACOUSTICS		

Coffee Break

Lunch Break

DAY 5 – FRIDAY, JUNE 10

	9:00-11:00	11:00-11:30	11:30-13:30	13:30-14:30	14:30-16:30
Room 1	MS 707 – 1 MICROMECHANICAL MODELLING: COMPETITION BETWEEN ANALYTICAL AND NUMERICAL METHODS		MS 707 – 2 MICROMECHANICAL MODELLING: COMPETITION BETWEEN ANALYTICAL AND NUMERICAL METHODS		
Room 2	MS 1304 – 2 STOCHASTIC MODELING AND IDENTIFICATION OF UNCERTAINTIES IN COMPUTATIONAL MECHANICS		MS 1303 ANALYSIS AND DESIGN OF SAFETY CRITICAL SYSTEMS UNDER UNCERTAINTY		
Room 3	MS 506 ACCURACY AND EFFICIENCY OF APPROXIMATE COMPUTATIONS IN SCIENCE AND ENGINEERING				
Room 4	MS 1216 STRUCTURAL ANALYSIS AND VIBRATIONS CS 1202 – 1 STRUCTURAL ANALYSIS AND MULTI BODY DYNAMICS		CS 1202 – 2 STRUCTURAL ANALYSIS AND MULTI BODY DYNAMICS CS 1301 MOLECULAR DYNAMICS		
Room 5	MS 1010 INVERSE PROBLEMS, DESIGN AND OPTIMIZATION		MS 1014 DESIGN OPTIMIZATION AND INVERSE PROBLEMS FOR WAVE PROPAGATION PROBLEMS		
Room 7	MS 808 – 1 MULTISCALE AND MULTIPHYSICS MODELING OF CEMENTITIOUS MATERIALS		MS 808 – 2 MULTISCALE AND MULTIPHYSICS MODELING OF CEMENTITIOUS MATERIALS		
Room 8	MS 802 – 1 MULTISCALE AND MULTIPHYSICS MODELING OF CEMENTITIOUS MATERIALS		MS 802 – 2 MULTISCALE AND MULTIPHYSICS MODELING OF CEMENTITIOUS MATERIALS		
Room 9	MS 908 – 1 VERIFICATION AND VALIDATION OF STRUCTURAL MECHANICS SIMULATION MODELS		MS 908 – 2 VERIFICATION AND VALIDATION OF STRUCTURAL MECHANICS SIMULATION MODELS		
Room 10			MS 107 MULTI-SCALE MODELS IN BIOMECHANICS AND MECHANOTRANSDUCTION		
Room 11	MS 1013 SOLUTION OF LARGE-SCALE INVERSE PROBLEMS				
Room 12	MS 1211 COMPUTATIONAL STRATEGIES FOR STRUCTURAL ROBUSTNESS ASSESSMENT				
Room 15	CS 980 NUMERICAL AND SYMBOLIC COMPUTATION		CS 610 AERO-ACOUSTICS		
Room 17	MS 1311 ADAPTIVE METHODS FOR FORWARD AND INVERSE PROPAGATION OF UNCERTAINTY IN COMPUTATIONAL MODELS				
Room 18	MS 804 – 2 MULTISCALE AND COMPUTATIONAL APPROACHES TO FRACTURE AND FAILURE		MS 804 – 3 MULTISCALE AND COMPUTATIONAL APPROACHES TO FRACTURE AND FAILURE		
Room 20	MS 905 – 5 DISCONTINUOUS GALERKIN METHODS: NEW TRENDS AND APPLICATIONS				
Room 21	MS 910 – 2 HIGH ORDER CFD METHODS: CONCLUSIONS AND OUTLOOK		MS 910 – 3 HIGH ORDER CFD METHODS: CONCLUSIONS AND OUTLOOK		
Room 22					
Room 23	MS 1011 – 1 SURROGATE-ASSISTED EVOLUTIONARY ALGORITHMS IN AERODYNAMIC DESIGN/OPTIMIZATION		MS 1011 – 2 SURROGATE-ASSISTED EVOLUTIONARY ALGORITHMS IN AERODYNAMIC DESIGN/OPTIMIZATION		

Coffee Break

Lunch Break

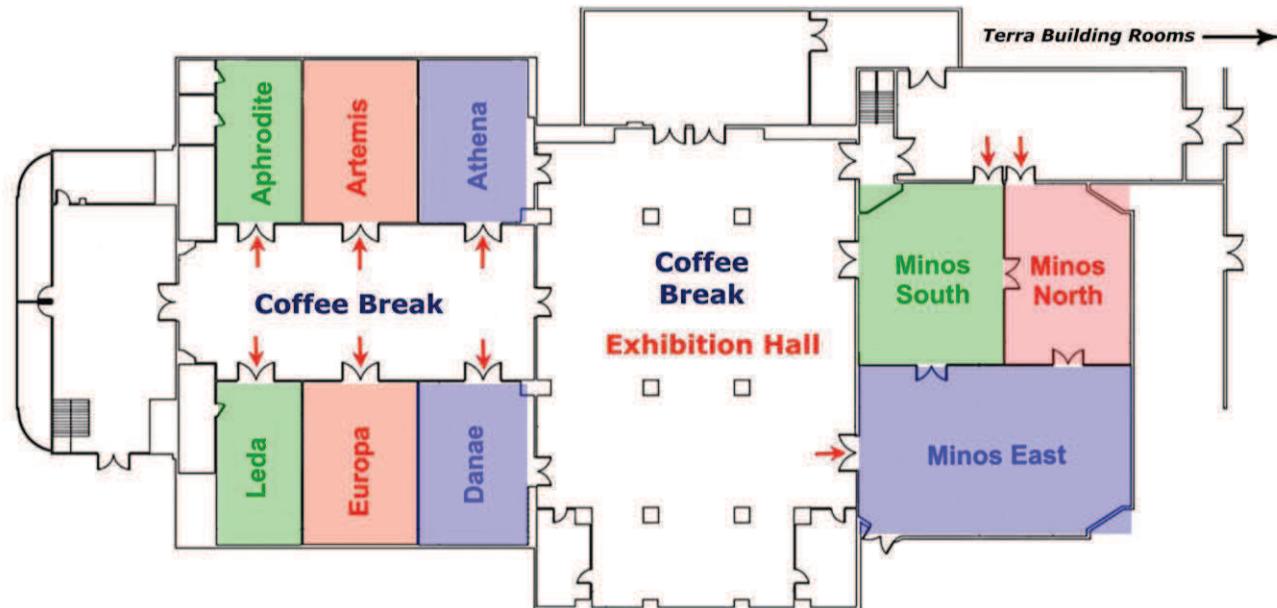
Plenary Lectures & Closing Ceremony

Conference Centre

Level 1

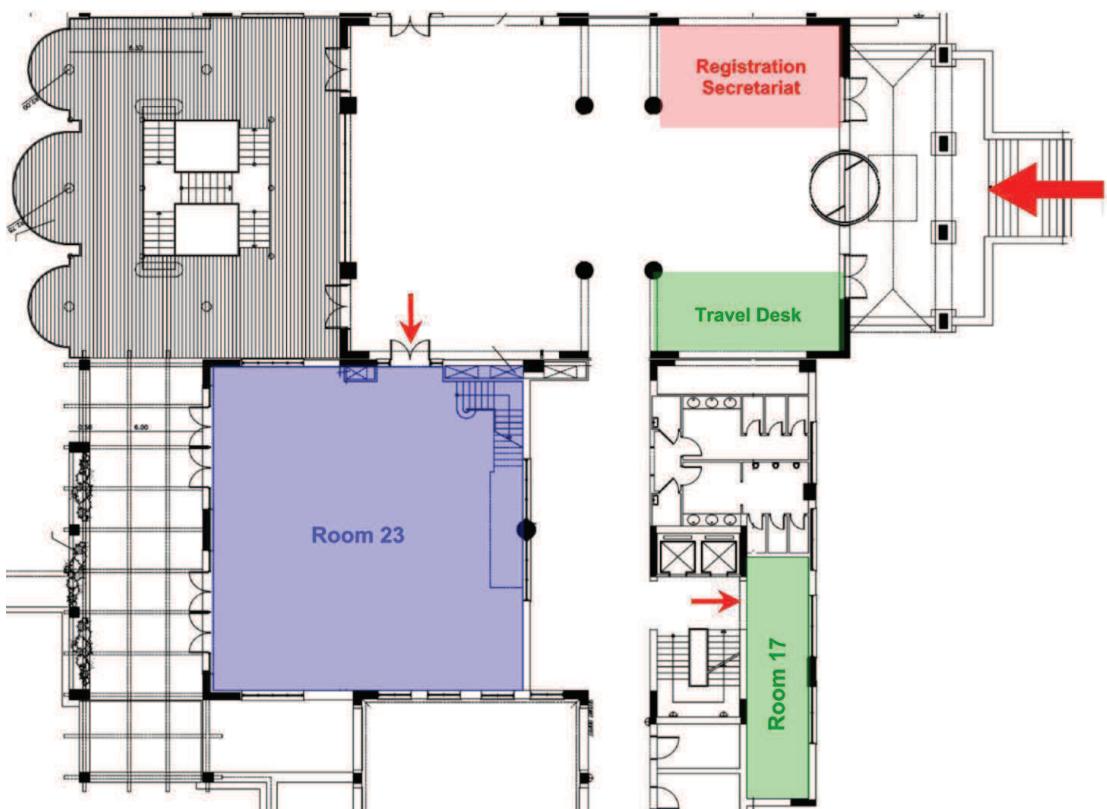


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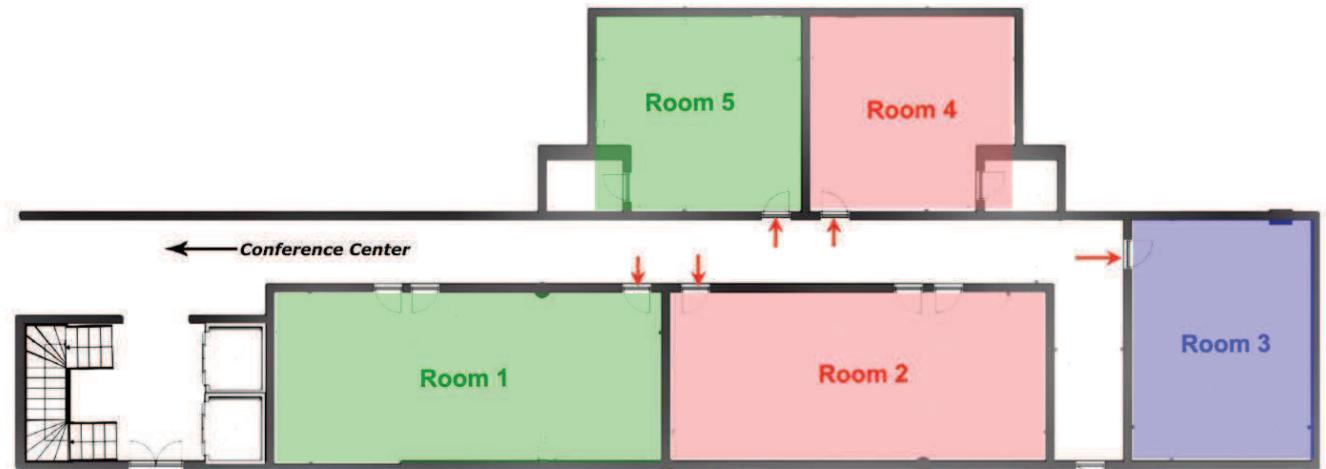


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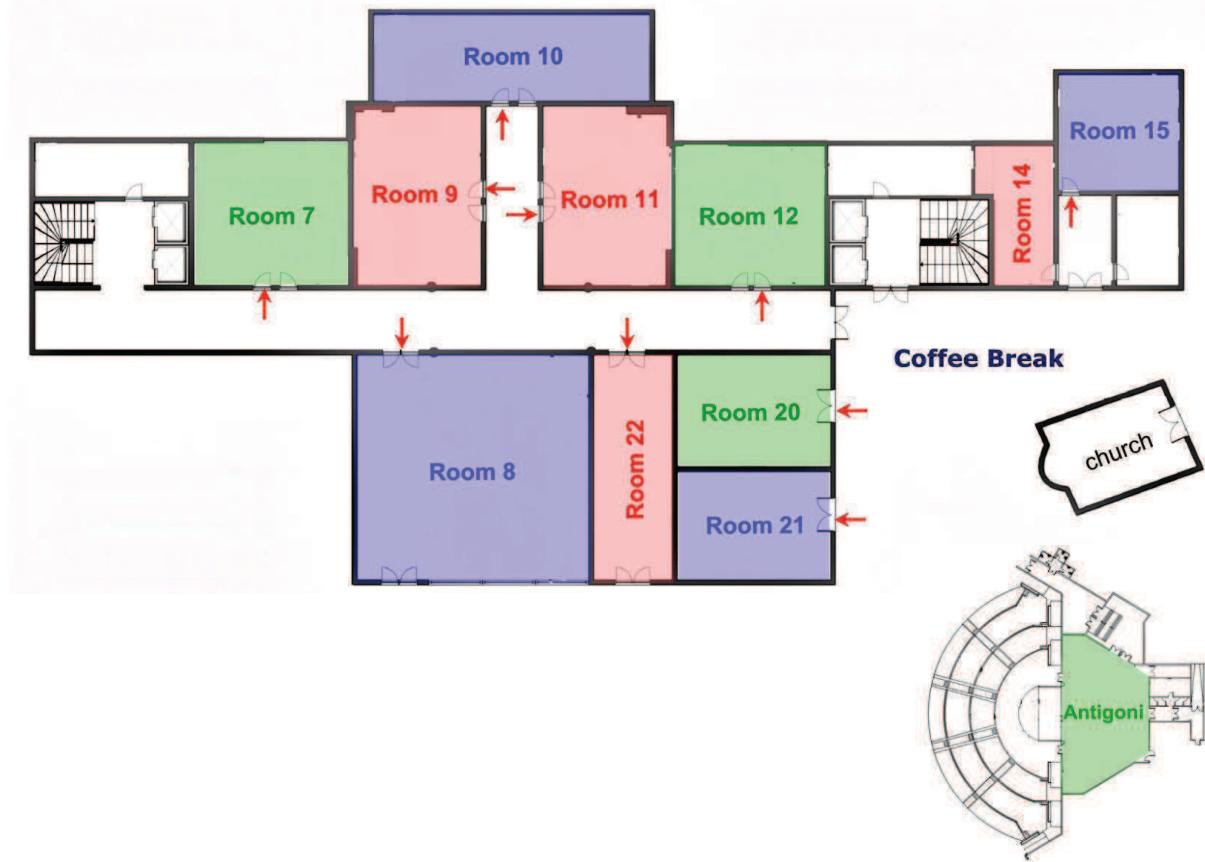


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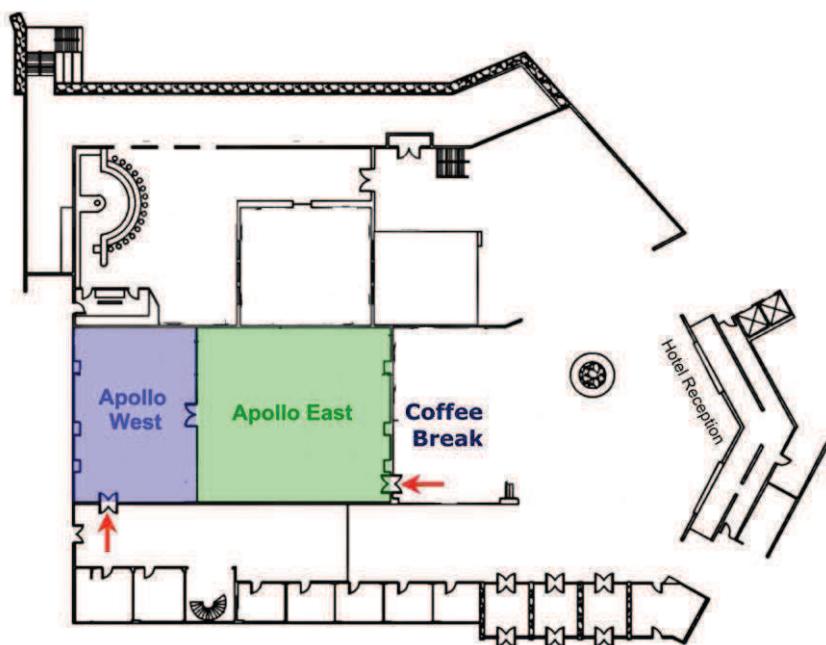
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Maris Building

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C. Hirsch, Belgium
A. Huerta, Spain
A. Iafrati, Italy
S. Idelsohn, Spain
M. Kojic, Serbia
B. Koren, Netherlands
P. Koumoutsakos, Switzerland
C. Lacor, Belgium
R. Löhner, USA
C-D. Munz, Germany
M. O'Rourke, Ireland
M. Oshima, Japan
J. Peraire, USA
J. Periaux, France
J. Reese, UK
R. Rossi, Spain
I. Tuncer, Turkey
R. Verzicco, Italy
W. Wall, Germany
J.H. Walther, Denmark

Computational Solids and Structural Mechanics

- | | |
|-----------------------------|----------------------|
| O. Allix, France | R. Ohayon, France |
| J. Bonet, UK | E. Oñate, Spain |
| J.C. Cante, Spain | R. Owen, UK |
| M. Cervera, Spain | U. Perego, Italy |
| J-S. Chen, USA | P. Quintela, Spain |
| A. Combescure, France | E. Ramm, Germany |
| R. Das, New Zealand | E. Stein, Germany |
| R. de Borst, UK | K. Terada, Japan |
| J. Eberhardsteiner, Austria | F. Ubertini, Italy |
| C. Farhat, USA | N-E. Wiberg, Sweden |
| J. Fish, USA | P. Wriggers, Germany |
| S. Ghosh, USA | |
| D. Givoli, Israel | |
| J.M. Goicoechea, Spain | |
| M. Kleiber, Poland | |
| P. Ladevèze, France | |
| C. Lovadina, Italy | |
| H. Mang, Austria | |
| J-F. Molinari, Switzerland | |

Industrial Interest Group

- | |
|--------------------------|
| B. Chetverushkin, Russia |
| M. Chiumenti, Spain |
| C. Hirsch, Belgium |
| G. Schrauf, France |
| V. Selmin, Belgium |

Congress Venue

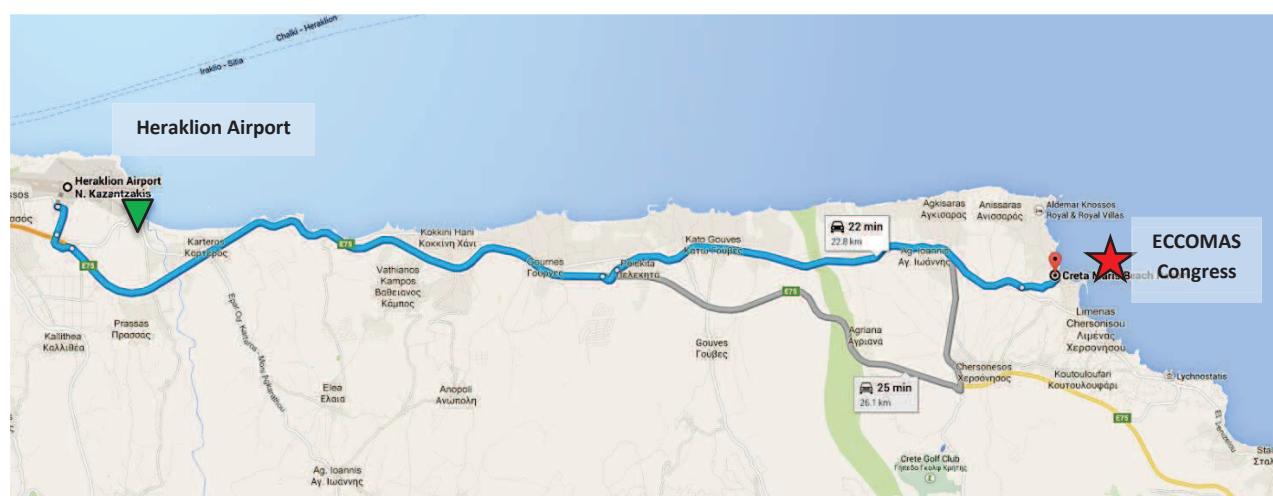
The Congress will take place at the Creta Maris Beach Resort, which is located in the city of Hersonissos situated 24 km east of the Heraklion International Airport “Nikos Kazantzakis”.

The Congress facilities are located in the premises of the complex made up of the Conference Center, the Terra Building and the Maris Building of the Creta Maris Beach Resort.

Crete Island



Congress Venue



Transportation

Transfer from and to the “Nikos Kazantzakis” International Airport

A shuttle service connecting the Airport to the Congress venue and the official Congress hotels and vice versa will be provided by the Congress Organizers at a cost of 15 € per person, per way. Travel time is approximately 20 minutes by deluxe, fully air conditioned coaches. Designated representatives of Erasmus Conferences Tours and Travel agency, holding a distinctive sign of the Congress will be waiting for the guests upon their arrival at the airport. Pre-booking of shuttle service is necessary.

The taxi stand at the airport is at the exit of the arrival halls. It takes about 20 minutes ride to the Hersonissos area.

Hotel transfer from and to the Conference Center

Shuttle services connecting the designated Congress hotels and the Conference Center will be provided free of charge by the Organizers, one in the morning to the Conference Center and one in the evening from the Conference Center, at specific times which will be available to the participants who have made their hotel booking through the official travel and accommodation agent Erasmus Conferences Tours & Travel S.A. For those participants that have made their hotel reservations independently, they can use the most convenient shuttle service provided by the Congress Organizers.



Congress Information

Registration and Check in

All attendees are required to check in at the registration desks at the lobby of the Terra Building (Lobby Level).

Identification Badge

Participants are required to wear badges at all times while in the Conference area or at a Congress sponsored events.

Secretariat Timetable

Sunday June 5,	16:00 to 20:00
Monday June 6,	7:30 to 18:30
Tuesday June 7,	8:30 to 19:00
Wednesday June 8,	8:30 to 19:00
Thursday June 9,	8:30 to 19:00
Friday June 10,	9:00 to 16:30

Papers Presentation – Time and Equipment

Most technical sessions will last 2 hours. Typical formats consist of six presentations of 20 minutes each or four presentations including a keynote lecture (KL) of 40 minutes duration. The allocated time for each presentation includes Q & A.

The Congress will not provide computers for presentation. All presentations will need to be made with the presenter's laptop computer using LCD projector. You are kindly requested to test your laptop with the projector in your session room during the break preceding your presentation.

No overhead projectors will be provided; therefore no presentations using transparencies will be possible. We strongly encourage you to have a backup of your presentation in a USB storage device in the event of your laptop has a technical problem or is incompatible with the LCD projector.

Make sure that you have the necessary cords /converters/adapters so that your laptop will work with Greek power outlets CEE 7/4, also called "Schuko" socket and the LCD projector.

Internet Access

Wireless Internet access will be available in the premises of the Congress venue.

Congress App

An official ECCOMAS Congress 2016 mobile application has been developed for IOS and Android Smartphone. Information for the mobile application will be available on site.

Lunch Option

Participants may have lunch at the Congress Restaurant **Estia** (Terra Building , Lobby Level) at the special price of 25 € per day, provided that the reservation is made online or via email at s.lianos@erasmus.gr, or at the hotel restaurants and cafeterias that operate for the hotel tenants at lunch time, or at the snack bar which will operate during lunch breaks of the Scientific Programme at the Veranda of the Level 1 of the Conference Centre. Alternatively, participants may have lunch in restaurants located in the area of Hersonissos, close to the Congress Venue.

Hersonissos from A to Z

Currency

The official currency in Greece is EURO. 1 Euro= 100 Cents

Coins: 1, 2, 5, 10, 20, 50 Cents; 1, 2 Euros

Bank Notes: 5, 10, 20, 50, 100, 200 Euros

The term Euro is usually abbreviated as EUR. The symbol for the Euro is €.

Foreign Exchange, banks & Credit Cards

Money can be changed at the airport, banks and exchange bureaus.

The banks that are located closest to the Conference Center are at Limenas Hersonissos, about 1 km from the Congress Venue:

- NATIONAL BANK OF GREECE, 106 Venizelou Eleftheriou Str.
- PIRAEUS BANK, 145 Venizelou Eleftheriou Str.
- ALPHA BANK, 2 Agiou Vasiliou Street & 110 Venizelou Eleftheriou Str.

Important telephone numbers

Emergency Number: 112

Fire Brigade: 199

Police: 100

Ambulance: 166

District Hospital Service Limenas Hersonissos: +30 2897021262

Pharmacies: 14944

Shopping & Traditional Products

There are shopping center offering a wide range of shops and goods. Visit the traditional shops of popular art; buy your souvenirs, such as hand-made textiles or embroidery, impressive ceramics representing archeological finds, and all kinds of decorative objects.

You could equally purchase traditional Cretan products sold as souvenirs. Olive oil, wine, raki, products of biological culture, olives, and therapeutic herbs.

Getting around Hersonissos

Public Bus

Regular Bus Services: <http://www.ktelherlas.gr/index.php>,

telephone number: +30 2810221765

Departures from Heraklion Port Station to Chersonisos, Mallia, Agios Nikolaos, Ierapetra, Sitia:

<http://www.ktelherlas.gr/userfiles/file/maymallia.pdf>

Taxi

The main taxi companies in Hersonissos can be reached at +30 28970 23723, +30 28970 21153.

Social Events

Welcome Reception:

Monday **June 6**, (19:00 to 21:00), Pool level in the Terra Building

Appreciation Event (by invitation only):

Wednesday **June 8**, (20:00 to 21:30), at the Antigoni Amphitheatre, Pool level in the Terra Building

Congress Banquet:

Thursday **June 9** (20:30 to 11:30), outside the Main Entrance of the Conference Center

Accompanying Persons' Programme

Reservations for the below excursions are made online or via email at s.lianos@erasmus.gr.

Excursion to Knossos Archaeological site and Heraklion museum

Duration: 7 hours approximately (08:30-15:30)

The tour is available on June 6th, on June 7th, June 9th and June 10th

The imposing palace of Knossos is built on a hill, next to the river Kairatos. This area has been inhabited since Neolithic times (6000 B.C.). Excavations have revealed that the Neolithic levels at Knossos are among the deepest in Europe. Neolithic ruins sometime after 2000 BC and was destroyed in 1700 BC. The second palace was erected on the same spot, even more magnificent and larger than the proceeding one. Around 1600 BC other large structures were built around the Palace, such as the "Little Palace", the "Royal Villa", the "South House" etc., while Knossos developed into a large town with many thousands of inhabitants. A new catastrophe occurred around 1450 B.C., but as the finds demonstrate, the Palace was repaired and used again until at least 1380 BC. Knossos continued its history as a great city state till the first Byzantine Period. To Heraklion for the visit of the Archaeological Museum, second only to Athens in importance throughout Greece. Here someone can find treasures from Knossos, Phaestos, Zakros and other sites in Crete, a most remarkable collection from Neolithic to Roman times. The tour includes visit to a local winery.



Excursion to Lassithi Plateau including visit to Dictaion Cave & to Kera Monastery

Duration: 7 hours approximately (08:15-15:30)

The tour is available on June 7th and June 8th

The ascent begins at the village of Mochos and among walnut and plane trees, the renovated and well-cared convent of Kera Kardiotissa, is reached. After the village of Ano Keras the road continues to climb up to the defile of Ambelou, where right and left the road, rise up half-ruined stone-built windmills which ground wheat till the beginning of the century. At this point it is worth taking a break from the driving to admire the panoramic view. From here can be seen the Cretan Sea and the north coast of Crete. South, to the rear, rises up the mountain mass of Dikte, while before you spreads out the acclaimed Lassithi Plateau. Lassithi is a plateau surrounded by mountains with eight natural entrances. It has always



been a refuge for the persecuted and a place where revolutions started. During the Venetian occupation, the inhabitants were forced to leave Lassithi for nearly two centuries. Archaeological finds reveal that the region was inhabited during Neolithic and Minoan Times.

Tour to Aghios Nikolaos and Spinalonga

*Duration: 10 hours approximately (08:15-18:15)
The tour is available on June 8th, and on June 9th*

Aghios Nikolaos, capital of the Prefecture of Lassithi, is without doubt the most picturesque harbour in Crete. Built on the west recess of Mirabello bay, it is considered to be one of the most highly developed tourist towns in Greece. During the Venetian occupation a fortress was built called Mirabello because of the beautiful view. Nevertheless, the importance of the harbour lessened as the Venetians built another one more protected "The Port of San Nicolo". The Name Aghios Nikolaos is that of the small Byzantine church located on the peninsula of the Port. Spinalonga, since antiquity, was the Fortress which protected the harbour of ancient Olous. The name Spinalonga is Venetian (Spina = Thorn, Longa = Long)



The Venetians built a fortress here in 1579 to protect the harbour of Elounda, one of the most important and finest fortresses built on Crete. In 1903 the Cretan Republic made Spinalonga into a colony for the lepers of Crete who they were housed on the island for nearly half century.

Full Day Tour to Samaria Gorge

*Duration: 16 hours approximately (06:15-22:00)
The tour is available on June 6th, on June 10th*

Its length is 18 km, with its width to vary from 300 to 4 meters, Samaria gorge is passing through the bulky limestone masses that tower up from 200 to 2.000 m. Leisurely walking, it normally takes 5 hours to reach the south coast. By the time you arrive at the plateau of Omalos (1.000 m altitude) on the White Mountains, the adventure begins by walking over rocks and through a forest with cool springs at shady resting sites. If you are lucky you might spot a "Kri-Kri", the wild mountain goat. The hiking ends by reaching the small fisher village of Agia Roumeli right at the Libyan Sea, where you have the opportunity of a refreshing swim and a good meal in one of the local taverns. From there you will take the boat for Chora Sfakion or Sougia and then the bus to return back to the hotel.



Associations Meetings

ECCOMAS Executive Council Meeting

Sunday June 5, 10:00 to 12:00, Apollo West

ECCOMAS Managing Board Meeting

Sunday June 5, 13:00 to 19:00, Apollo West

ECCOMAS Industrial Interest Group

Monday, June 6, 12:00 to 14:00, Room 14

IACM Executive Council Meeting

Monday June 6, 12:00 to 14:00, Estia Restaurant

ECCOMAS General Assembly Meeting

Tuesday June 7, 13:00 to 14:30, Room 15

GACM 25th Anniversary Meeting

Tuesday June 7, 16:30 to 19:00, Room 23

ECCM Technical Committee of ECCOMAS

Wednesday, June 8, 13:00 to 14:30, Room 14

Young Investigators Committee of ECCOMAS

Wednesday June 8, 13:00 to 14:30, Room 15

CFD Technical Committee of ECCOMAS

Thursday June 9, 13:00 to 14:30, Room 15

Scientific Programme

Plenary Lecturers



Theodosios P. Tasiros (*Opening Plenary Lecture*)
National Technical University of Athens, Greece

12327 HELLENISTIC TECHNOLOGY AND THE STEAM-POWERED FORCE-PUMP
Monday, 9:15-10:00, Zeus



Alexandre Ern
Université Paris-Est, CERMICS , ENPC, France

12459 DISCONTINUOUS SKELETAL METHODS IN COMPUTATIONAL MECHANICS
Wednesday, 15:15-16:00, Zeus



Charbel Farhat
Stanford University, USA

10414 RECENT ADVANCES IN PARAMETRIC NONLINEAR MODEL ORDER REDUCTION:
TREATMENT OF SHOCKS, CONTACT AND INTERFACES, STRUCTURE-PRESERVING
HYPER REDUCTION, ACCELERATION OF MULTISCALE FORMULATIONS, AND
APPLICATION TO DESIGN OPTIMIZATION
Friday, 15:15-16:00, Zeus



Gerhard A. Holzapfel
Graz University of Technology, Austria

12726 MODELING OF FIBER-REINFORCED SOLIDS WITH APPLICATION TO SOFT TISSUES
Monday, 10:30-11:15, Zeus



Antonio Huerta
Universitat Politècnica de Catalunya, Spain

11438 GENERALIZED PARAMETRIC SOLUTIONS : A COMMODITY IN SIMULATION - BASED
ENGINEERING
Wednesday, 14:30-15:15, Zeus



Thomas J.R. Hughes
ICES, University of Texas at Austin, USA

11433 ISOGEOMETRIC ANALYSIS: PAST, PRESENT, FUTURE
Wednesday, 16:00-16:45, Zeus



Alfio Quarteroni

École Polytechnique Fédérale de Lausanne (EPFL), Switzerland and Politecnico di Milano, Italy

- 12169** REDUCED ORDER MODELS FOR ANALYSIS AND SYNTHESIS OF COMPLEX SYSTEMS
Monday, 11:15-12:00, Zeus



Ole Sigmund

Technical University of Denmark, Denmark

- 12630** RECENT ADVANCES IN TOPOLOGY OPTIMIZATION
Friday, 14:30-15:15, Zeus

Semi-Plenary Lecturers



Assyr Abdulle

École polytechnique fédérale de Lausanne, Switzerland

- 12276** MODEL ORDER REDUCTION FOR MULTISCALE MODELING AND SIMULATION
Thursday, 11:00-11:40, Zeus East



Olivier Allix

ENS Cachan, France

- 12176** ON WEAKLY-INTRUSIVE MULTI-SCALE SUBSTITUTION METHOD IN DYNAMICS: PRINCIPLE AND FIRST APPLICATIONS
Thursday, 11:40-12:20, Zeus East



Lourenco Beirao da Veiga

Department of Mathematics, University of Milano-Bicocca

- 16774** INTRODUCTION AND SOME RECENT ADVANCES ON THE VIRTUAL ELEMENT METHOD
Thursday, 11:40-12:20, Minos North



Andreas G. Boudouvis

National Technical University of Athens, Greece

- 12288** GETTING THE MOST OUT OF COMMERCIAL CFD CODES IN PROCESS ENGINEERING ANALYSIS
Thursday, 11:00-11:40, Zeus West



Annalisa Buffa

CNR-IMATI, Italy

- 15672** ISOGEOMETRIC TECHNIQUES FOR MORTARING AND CONTACT MECHANICS
Moved to Tuesday, 11:40-12:20, Zeus North



Ramon Codina

Universitat Politècnica de Catalunya

- 13777** ON THE IMPOSITION OF ESSENTIAL BOUNDARY CONDITIONS ON NON-MATCHING FINITE ELEMENT MESHES

Thursday, 11:00-11:40, Minos East



Laura De Lorenzis

Technische Universität Braunschweig, Germany

- 12905** THE PHASE-FIELD APPROACH TO FRACTURE: MODELING AND COMPUTATIONAL ASPECTS

Thursday, 11:00-12:00, Zeus North



Bernard Geurts

University of Twente, The Netherlands

- 12264** HEAT AND MASS TRANSFER IN TURBULENT FLOW

Tuesday, 12:20-13:00, Zeus East



Kyriakos Giannakoglou

National Technical University of Athens, Greece

- 15978** CONTINUOUS ADJOINT-BASED OPTIMIZATION IN FLUID MECHANICS & AERODYNAMICS: RECENT PROGRESS AND APPLICATIONS

Thursday, 12:20-13:00, Zeus West



Antonio J. Gil

College of Engineering, Swansea University

- 16779** A NEW FRAMEWORK FOR LARGE STRAIN ELECTROMECHANICS BASED ON CONVEX MULTI-VARIABLE STRAIN ENERGIES

Thursday, 11:00-11:40, Minos North



Dan Givoli

Israel Institute of Technology, Israel

- 5426** COMPUTATIONAL TIME REVERSAL AND DAMAGE IDENTIFICATION

Thursday, 11:40-12:20, Minos East



Anthony Gravouil

INSA de Lyon – CNRS, France

- 12145** HETEROGENEOUS ASYNCHRONOUS TIME INTEGRATORS FOR COMPUTATIONAL STRUCTURAL DYNAMICS

Tuesday, 11:00-11:40, Minos East



George Karniadakis

Brown University, USA

- 13266** THE DAWNING OF THE AGE OF FRACTIONAL MODELING IN COMPUTATIONAL SCIENCE AND ENGINEERING

Tuesday, 11:00-11:40, Zeus East



Mats G. Larson
Umea University, Sweden

16549 CUTFEM AND CUTIGA: DISCRETIZING GEOMETRY AND PARTIAL DIFFERENTIAL EQUATIONS
Tuesday, 11:00-11:40, Zeus West



Kim Meow Liew
City University of Hong Kong, Hong Kong

12460 MODELING OF CARBON NANO MATERIALS
Replaced by Annalisa Buffa, 15672 ISOGEOMETRIC TECHNIQUES FOR MORTARING AND CONTACT MECHANICS



Wing Kam Liu
Northwestern University, USA

12149 MODELING AND SIMULATION CHALLENGES IN MATERIALS DESIGN FOR ADDITIVE MANUFACTURING APPLICATIONS
Tuesday, 11:00-11:40, Zeus North



Federico Negri
École Polytechnique Fédérale de Lausanne, Switzerland

16497 EFFICIENT TECHNIQUES FOR THE MODEL ORDER REDUCTION OF PARAMETRIZED PROBLEMS IN COMPUTATIONAL FLUID AND SOLID MECHANICS
Thursday, 12:20-13:00, Minos East



Shinji Nishiwaki
Kyoto University, Japan

12410 A NEW TOPOLOGY OPTIMIZATION METHOD AND ITS APPLICATION TO INNOVATIVE STRUCTURE AND MATERIAL DESIGNS
Tuesday, 12:20-13:00, Minos East



Ursula Rasthofer
TU München, Germany

16509 COMPUTATIONAL MULTISCALE METHODS FOR TURBULENT SINGLE- AND TWO-PHASE FLOWS
Thursday, 12:20-13:00, Minos North



Ernst Rank
TU München, Germany

12302 HIGH ORDER FICTITIOUS DOMAIN METHODS – HIGH FIDELITY SIMULATION FOR COMPLEX SOLID MODELS
Tuesday, 11:40-12:20, Zeus West



Cord-Christian Rossow
German Aerospace Center, Germany

12300 PERSPECTIVES AND REQUIREMENTS OF NUMERICAL SIMULATION FOR FUTURE AIRCRAFT DESIGN
Tuesday, 12:20-13:00, Zeus North



Giancarlo Sangalli
Università di Pavia, Italy

12267 COMPUTATIONALLY-EFFICIENT ISOGEOMETRIC k-METHOD
Thursday, 12:00-13:00, Zeus North



Jörg Schröder
University Duisburg-Essen, Germany

12401 PROS AND CONS OF SELECTED MIXED GALERKIN AND LEAST-SQUARES FINITE ELEMENT FORMULATIONS
Tuesday, 11:40-12:20, Zeus East



Bert Sluys
Delft University of Technology, The Netherlands

12484 MULTI-SCALE MODELLING OF LOCALISED FAILURE PROCESSES
Thursday, 12:20-13:00, Zeus East



Christian Soize
Université Paris-Est, France

5795 NONPARAMETRIC PROBABILISTIC APPROACH OF MODEL UNCERTAINTIES INTRODUCED BY A PROJECTION-BASED NONLINEAR REDUCED-ORDER MODEL
Tuesday, 11:40-12:20, Minos East



Roberto Verzicco
Università di Roma "Tor Vergata", Italy

12202 HEMODYNAMICS OF BIOLOGIC AND MECHANICAL PROSTHETIC HEART VALVES
Thursday, 11:40-12:20, Zeus West



Barbara Wohlmuth
TU München, Germany

15508 HYBRID HIERARCHICAL CONCEPTS FOR LARGE SCALE SIMULATIONS
Tuesday, 12:20-13:00, Zeus West

Keynote Lecturers

Maarten Arnst

8833 SENSITIVITY ANALYSIS OF PARAMETRIC UNCERTAINTIES AND MODELING ERRORS IN

GENERALIZED PROBABILISTIC MODELING

Thursday, 17:00-19:00, Room 8

Stephane Avril, Chiara Bellini, Matthew R. Bersi, Paolo Di Achille, Katia Genovese, Jay D. Humphrey

7150 INVERSE CHARACTERIZATION OF REGIONAL, NONLINEAR AND ANISOTROPIC PROPERTIES OF

ARTERIES

Wednesday, 11:00-13:00, Zeus East

Santiago Badia, Marc Olm

4974 TOWARDS SPACE-TIME ITERATIVE SOLVERS BASED ON BALANCING DOMAIN DECOMPOSITION

Tuesday, 14:30-16:30, Minos East

Gernot Beer

4408 ADVANCES IN THE BOUNDARY ELEMENT METHOD IN GEOMECHANICS

Monday, 14:00-16:00, Aphrodite

Silvia Bertoluzza, Vincent Chabannes, Mourad Ismail, Christophe Prud'homme

6486 THE EFFECT OF QUADRATURE ON HIGH ORDER FICTITIOUS DOMAIN METHODS

Wednesday, 17:15-19:15, Room 20

Anne-Kathrin Schäuble, Anton Tkachuk, Manfred Bischoff

11031 RECIPROCAL MASS MATRICES IN EXPLICIT DYNAMICS

Tuesday, 14:30-16:30, Room 12

Lourenco Beirao da Veiga, Franco Brezzi, Donatella Marini, Alessandro Russo

9048 SERENDIPITY H(DIV) AND H(CURL) CONFORMING VEMS

Tuesday, 8:30-10:30, Zeus East

Matteo Bruggi

5930 ANALYSIS AND DESIGN OF REINFORCED CONCRETE STRUCTURES AS A TOPOLOGY

OPTIMIZATION PROBLEM

Wednesday, 11:00-13:00, Leda

Tadeusz Burczyński, Adam Mrozek, Wacław Kuś

9447 GENERATION OF GRAPHENE-LIKE ATOMS STRUCTURES BY MEANS OF MEMETIC ALGORITHMS

Wednesday, 11:00-13:00, Antigoni

Xiao-Chuan Cai

5488 PARALLEL MULTILEVEL ALGORITHMS FOR FLUID-STRUCTURE INTERACTION PROBLEMS

Tuesday, 14:30-16:30, Artemis

Carsten Carstensen, Hella Rabus

11849 AXIOMS OF ADAPTIVITY: RATE OPTIMALITY OF ADAPTIVE ALGORITHMS WITH SEPARATE

MARKING

Wednesday, 8:30-10:30, Danae

Juan Cebral, Xinjie Duan, Bongjae Chung, Fernando Mut, Khaled Aziz, Anne Robertson

5993 CONNECTING THE LOCAL HEMODYNAMIC CONDITIONS TO THE WALL STRUCTURE IN HUMAN
CEREBRAL ANEURYSMS

Wednesday, 8:30-10:30, Zeus West

Francisco Chinesta, Jose Vicente Aguado, Domenico Borzacchiello, Chady Ghnatos, Elias Cueto, David Gonzalez

- 4784** COMPUTATIONAL VADEMECUMS FOR LARGE INDUSTRIAL APPLICATIONS
Tuesday, 14:30-16:30, Leda

Tijana Djukic, Nenad Filipovic

- 10709** REAL TIME OTOCONIA PARTICLE TRACKING IN THE SIMPLIFIED SEMI-CIRCULAR CANAL
Wednesday, 8:30-10:30, Room 7

Tor Dokken

- 5907** COMPUTER AIDED TECHNOLOGIES FOR ADDITIVE MANUFACTURING
Wednesday, 11:00-13:00, Room 18

Ioannis Doltsinis

- 16560** ARGYRI'S NATURAL APPROACH RELATED TO DEFORMABLE CONTINUA AND SPRING LATTICE MODELS
Tuesday, 8:30-10:30, Room 3

Zdenek Dostal, Tomas Kozubek, David Horak, Vaclav Hapla, Alex Markopoulos, Tomas Brzobohaty, Lubos Riha, Oldrich Vlach

- 11611** SCALABLE MASSIVELY PARALLEL ALGORITHMS FOR CONTACT PROBLEMS
Thursday, 14:30-16:30, Room 15

Fabian Duddeck

- 8778** OPTIMAL TOPOLOGIES OF EXTRUSION BEAMS UNDER AXIAL AND TRANSVERSAL IMPACT LOADS
Thursday, 8:30-10:30, Apollo West

Alexander Düster, Meysam Joulaian, Stephan Heinze, Simeon Hubrich, Aliakbar Taghipour, Jamshid Parvizian

- 8116** THE FINITE CELL METHOD: SOME RECENT ADVANCES AND APPLICATIONS TO SOLID MECHANICS
Monday, 14:00-16:00, Artemis

Herbert Egger

- 9398** A FICTITIOUS DOMAIN LEVELSET METHOD FOR INCLUSION DETECTION
Monday, 16:30-18:30, Artemis

Hassan Al Akhras, Thomas Elguedj, Anthony Gravouil, Michel Rochette

- 4533** ISOGEOOMETRIC ANALYSIS SUITABLE TRIVARIATE MODELS FROM CUBOID DECOMPOSITION QUADRANGULATION
Thursday, 14:30-16:30, Zeus North

John Evans, Joseph Benzaken, Christopher Coley

- 11276** MULTIGRID METHODS FOR ISOGEOOMETRIC STRUCTURE-PRESERVING DISCRETIZATIONS
Monday, 16:30-18:30, Zeus North

Carlos Felippa, Eugenio Onate, Sergio Idelsohn

- 8341** A VARIATIONAL, FIC-BASED FORMULATION FOR PARTICLE FINITE ELEMENT METHODS STABILIZED WITH HIGH ORDER SPATIAL DERIVATIVES
Wednesday, 11:00-13:00, Minos North

Oliver Fringer, Robert Arthur

- 8967** TRANSPORT AND MIXING DUE TO BREAKING INTERNAL GRAVITY WAVES ON SLOPES
Wednesday, 8:30-10:30, Room 8

Pilar Garcia-Navarro, Javier Murillo, Mario Morales-Hernandez, Carmelo Juez, Asier Lacasta

- 7665** EFFICIENT TWO-DIMENSIONAL SIMULATION MODELS FOR HYDRAULIC AND MORPHODYNAMIC TRANSIENTS
Wednesday, 11:00-13:00, Room 21

Gregor Gassner, Andrew Winters

- 7229** SPLITFORM DISCONTINUOUS GALERKIN SCHEMES FOR THE COMPRESSIBLE NAVIER-STOKES EQUATIONS

Thursday, 8:30-10:30, Room 20

Anil Nemili, Emre Özkaya, Nicolas R. Gauger, Felix Kramer, Frank Thiele

- 8169** A TWO-LEVEL HYBRID APPROACH FOR OPTIMAL ACTIVE FLOW CONTROL ON A THREE-ELEMENT AIRFOIL

Wednesday, 11:00-13:00, Room 23

Sambit Das, Mrinal Iyer, Vikram Gavini

- 5739** LARGE-SCALE ELECTRONIC STRUCTURE CALCULATIONS AND STUDIES ON DISLOCATIONS IN ALUMINUM

Friday, 9:00-11:00, Antigoni

Clinton Groth, Chris Lam, Boone Tensuda

- 8926** ACCURATE AND EFFICIENT NUMERICAL SOLUTION OF MOMENT CLOSURES DESCRIBING THREE-DIMENSIONAL VISCOS AND HEAT-CONDUCTING GASEOUS FLOWS

Tuesday, 17:00-19:00, Apollo West

Friedrich Gruttmann, Werner Wagner, Gregor Knust

- 5298** A SHELL ELEMENT FOR LAMINATED STRUCTURES WITH CONTINUOUS INTERLAMINAR SHEAR STRESSES

Wednesday, 11:00-13:00, Danae

Thomas Hagstrom, John Lagrone, Daniel Appelo

- 5484** OPTIMAL RADIATION BOUNDARY CONDITIONS AND ABSORBING LAYERS FOR ELASTIC WAVES

Friday, 9:00-11:00, Minos North

Isaac Harari

- 5105** EMBEDDED BOUNDARY METHODS FOR PLATE BENDING PROBLEMS

Monday, 14:00-16:00, Europa

Leong Hien Poh

- 9921** A TRANSIENT GRADIENT DAMAGE MODEL FOR LOCALIZED BRITTLE FAILURE

Thursday, 8:30-10:30, Room 5

Koen Hillewaert, Tobias Leicht

- 11177** SUMMARY AND CONCLUSIONS OF THE COMPUTATIONAL CHALLENGE TEST CASES

Friday, 11:30-13:30, Room 21

Paolo Di Achille, John Wilson, Lana Virag, Igor Karsaj, Jay Humphrey

- 7548** A BIOCHEMOMECHANICAL ROLE OF THROMBUS IN ABDOMINAL AORTIC ANEURYSMS

Tuesday, 14:30-16:30, Zeus West

Eugenio Oñate, Sergio Idelsohn

- 16535** ADVANCES IN THE PARTICLE FINITE ELEMENT METHOD FOR MULTIDISCIPLINARY PROBLEMS

Thursday, 14:30-16:30, Zeus East

Alexander Idesman

- 4926** REDUCTION OF NUMERICAL DISPERSION FOR WAVE PROPAGATION PROBLEMS. APPLICATION TO ISOGEOMETRIC ELEMENTS AND FINITE ELEMENTS.

Tuesday, 8:30-10:30, Room 12

Marcin Kaminski, Michał Strakowski

- 9229** ON FULLY COUPLED THERMO-ELASTO-PLASTIC STOCHASTIC FINITE ELEMENT ANALYSIS OF STEEL STRUCTURES

Tuesday, 14:30-16:30, Room 3

Spyros A. Karamanos, Patricia Pappa

- 11295** NON-ASSOCIATIVE J2 PLASTICITY MODEL FOR FINITE ELEMENT BUCKLING ANALYSIS OF THICK-WALLED METAL SHELLS
Wednesday, 17:15-19:15, Room 9

Milos Kojic, Miljan Milosevic, Vladimir Simic, Mauro Ferrari, Eugene J. Koay, Arturas Ziemys

- 11735** A MODEL FOR DRUG TRANSPORT IN TUMOR
Thursday, 14:30-16:30, Danae

Trond Kvamsdal, Mukesh Kumar, Yared Bekele, Eivind Fonn, Arne Morten Kvarving, Lars Hov Odsæter, Knut Morten Okstad

- 11109** GOAL ORIENTED ADAPTIVE ISOGEOMETRIC METHODS WITH APPLICATIONS TO POROUS MEDIA
Wednesday, 17:15-19:15, Zeus North

Pierre Ladeveze, David Neron, Charles Paillet

- 9495** AN EXTENDED PGD-REDUCED MODEL APPROACH IN SOLID MECHANICS FOR LARGE NUMBER OF PARAMETERS
Monday, 14:00-16:00, Minos North

Nikolaos Perogamvros, George Lampeas

- 5900** DEVELOPMENT AND VALIDATION OF A COMPOSITE FASTENED JOINT MODEL USING ADVANCED MEASUREMENT TECHNIQUES
Friday, 11:30-13:30, Room 9

Patrick Le Tallec

- 11749** MULTISCALE MODELLING OF SOFT MATERIALS
Wednesday, 11:00-13:00, Apollo East

Michael Leschziner, Lionel Agostini

- 9720** ON THE UNIVERSALITY OF NEAR-WALL TURBULENCE IN THE PRESENCE OF ENERGETIC OUTER STRUCTURES
Wednesday, 8:30-10:30, Room 1

Christian Linder, Xiaoxuan Zhang

- 9290** MODELING DIFFUSION INDUCED FRACTURE IN SILICON ELECTRODES THROUGH A PHASE FIELD APPROACH
Monday, 14:00-16:00, Zeus West

Erik Lund

- 10127** MASS MINIMIZATION OF MULTI-MATERIAL LAMINATED COMPOSITES WITH FAILURE CONSTRAINTS
Tuesday, 14:30-16:30, Danae

Rolf Mahnken, Christian Dammann

- 7214** EFFECTIVE MESO AND MACRO PROPERTIES FOR FIBRE-REINFORCED-POLYMER CURING COUPLED TO VISCO-ELASTICITY
Tuesday, 8:30-10:30, Antigoni

Stefan Pavlicek, Xin Jia, Herbert A. Mang

- 10115** ON THE CORRELATION OF THE PERCENTAGE BENDING ENERGY AND THE NONLINEARITY OF PREBUCKLING PATHS
Thursday, 17:00-19:00, Room 17

Lourenco Beirao da Veiga, Franco Brezzi, Donatella Marini, Alessandro Russo

- 6317** SERENDIPITY NODAL VEM SPACES
Monday, 14:00-16:00, Room 23

Huw Woodward, Sergei Utyuzhnikov, Patrick Massin

- 9492** APPLICATION OF THE DIFFERENCE POTENTIAL METHOD TO LINEAR ELASTIC FRACTURE MECHANICS PROBLEMS
Wednesday, 8:30-10:30, Room 20

Hermann G. Matthies

- 6540** THE RÔLE OF STOCHASTIC IDENTIFICATION IN MULTI-SCALE MODELLING OF HETEROGENEOUS MATERIALS
Thursday, 14:30-16:30, Zeus West

Günther Meschke, Dirk Leonhart, Ildar Khisamitov, Seyed Mohseni, Sven Beckhuis, Jithender J. Timothy

- 8716** XFEM AND PHASEFIELD MODELING OF HYDRAULIC FRACTURING PROCESSES
Friday, 11:30-13:30, Athena

John Michopoulos, Athanasios Iliopoulos, John Hermanson, John Steuben

- 5675** CONSTITUTIVE CHARACTERIZATION OF COMPOSITES VIA INVERSE METHODS ENABLED BY ROBOTIC MULTIAXIAL TESTING AND HIGH-PERFORMANCE FULL-FIELD METHODS
Thursday, 14:30-16:30, Room 10

Christian Miehe, Stephan Teichtmeister, Steffen Mauthe

- 11918** MINIMIZATION PRINCIPLES IN MULTI-PHYSICS OF SOLIDS AT FRACTURE
Thursday, 17:00-19:00, Athena

Hayder Hasan, Perumal Nithiarasu

- 9194** A LOCALLY CONSERVATIVE GALERKIN (LCG) METHOD IN ITS SEMI- AND FULLY- IMPLICIT FORMS FOR SOLVING BLOOD FLOW IN SYSTEMIC CIRCULATIONS
Thursday, 14:30-16:30, Aphrodite

Javier Oliver, Alfredo E. Huespe, Manuel Caicedo

- 5743** A CONTINUUM APPROACH FOR MULTISCALE PROPAGATING MATERIAL FRACTURE MODELING
Tuesday, 14:30-16:30, Antigoni

Eugenio Oñate, Sergio Idelsohn

- 16535** ADVANCES IN THE PARTICLE FINITE ELEMENT METHOD FOR MULTIDISCIPLINARY PROBLEMS
Thursday, 14:30-16:30, Zeus East

Michael Bogdanor, Caglar Oskay, Stephen Clay

- 7732** INTERACTIONS OF DAMAGE MECHANISMS IN COMPOSITES SUBJECTED TO FATIGUE – LESSONS LEARNED FROM A BLIND PREDICTION STUDY
Wednesday, 17:15-19:15, Room 18

Anna Pandolfi, Gabriele Della Vecchia, Maria Laura De Bellis, Michael Ortiz

- 8442** A POROUS BRITTLE DAMAGE MATERIAL MODEL
Monday, 16:30-18:30, Room 22

M. Reza Hirmand, Katerina D. Papouli

- 12093** DISCONTINUOUS GALERKIN FORMULATION WITH NITSCHE FLUX FOR COHESIVE FRACTURE SIMULATIONS
Friday, 11:30-13:30, Room 18

Claus B.W. Pedersen, James Fort, Peter M. Clausen, Subham Sett

- 7545** INDUSTRIAL ADDITIVE MANUFACTURING AND DESIGNING
Tuesday, 17:00-19:00, Room 18

Maria Vlachomitrou, Nikos Pelekasis

- 8086** A NUMERICAL STUDY OF THE DYNAMIC BEHAVIOR OF AN ENCAPSULATED MICROBUBBLE IN A WALL-RESTRICTED FLOW
Thursday, 17:00-19:00, Danae

Massimiliano Cremonesi, Francesco Ferri, Umberto Perego

- 7927** A LAGRANGIAN PFEM APPROACH TO THE NUMERICAL SIMULATION OF 3D LARGE SCALE LANDSLIDES IMPINGING IN WATER RESERVOIRS
Thursday, 8:30-10:30, Zeus East

Per-Olof Persson, Matthew Zahr

- 9074** A FULLY DISCRETE ADJOINT DISCONTINUOUS GALERKIN METHOD FOR PDE-CONSTRAINED TIME-PERIODIC OPTIMIZATION
Friday, 11:30-13:30, Room 20

Alexander Popp, Marie Oshima

- 6413** BOTTOM-UP MODELING OF AAA STENT GRAFTS AND STENT PLACEMENT PROCEDURES
Tuesday, 14:30-16:30, Zeus East

Bastian Oesterle, Ekkehard Ramm, Manfred Bischoff

- 9994** HIERARCHIC ISOGEOMETRIC GEOMETRICALLY LINEAR AND NONLINEAR SHELL ELEMENTS
Tuesday, 14:30-16:30, Zeus North

Rene Hiemstra, Thomas JR Hughes, Alessandro Reali

- 11253** HIGH ORDER EXPLICIT STRUCTURAL DYNAMICS WITH ISOGEOMETRIC COLLOCATION
Tuesday, 8:30-10:30, Zeus North

Ignacio Romero, David Portillo, Daniel del Pozo, Daniel Rodríguez, Javier Segurado

- 9207** MUESLI: A MATERIAL UNIVERSAL LIBRARY
Thursday, 8:30-10:30, Room 9

Thomas Rung, Jörn Kröger

- 7708** CAD-FREE ADJOINT SHAPE OPTIMISATION IN MARITIME TWO-PHASE FLOWS
Tuesday, 14:30-16:30, Room 23

Andreas Kampitsis, Evangelos Sapountzakis

- 4747** A FIBRE PLASTICITY MODEL FOR THE DYNAMIC ANALYSIS OF WIND TURBINE TOWERS
Wednesday, 11:00-13:00, Room 8

Siavash Soltani-bajestani, Maryam Gholamirad, Panthea Sepehrband

- 10965** MULTI-SCALE MODELING OF DIFFUSION-CONTROLLED PROCESSES DURING ULTRASONIC BONDING
Thursday, 8:30-10:30, Room 9

Vladimir Sladek, Bruno Musil, Jan Sladek

- 7510** EFFECTIVE ELASTICITY COEFFICIENTS IN DRY POROUS MATERIALS. NUMERICAL AND SEMI-ANALYTICAL APPROACHES
Friday, 11:30-13:30, Room 1

Filip Putar, Jurica Soric, Tomislav Lesicar, Zdenko Tonkovic

- 7030** DAMAGE MODELING USING STRAIN GRADIENT BASED FINITE ELEMENT FORMULATION
Tuesday, 14:30-16:30, Room 4

Aram Soroušian

- 11392** ON THE EFFECT OF VISCOUS DAMPING ON THE STABILITY OF TIME INTEGRATION METHODS
Friday, 9:00-11:00, Room 3

Konstantinos Spiliopoulos, Konstantinos Panagiotou, Ioannis Kapogiannis

10324 ADVANCES OF THE RSDM TO THE SHAKEDOWN ANALYSIS OF STRUCTURES

Monday, 14:00-16:00, Room 11

Constantine Spyros, Charilaos Maniatakis

15540 SEISMIC PROTECTION OF MONUMENTS AND HISTORIC STRUCTURES – THE SEISMO RESEARCH PROJECT

Tuesday, 8:30-10:30, Room 7

Panos Koutsianitis, Amalia Moutsopoulou, Georgios Drosopoulos, Georgios Tairidis, Georgia Foutsitzi, Georgios Stavroulakis

11049 OPTIMAL CONTROL TUNNING IN SMART STRUCTURES WITH DELAMINATIONS

Thursday, 14:30-16:30, Room 11

Dimitrios Savvas, George Stefanou

10001 DETERMINATION OF MESOSCALE RANDOM FIELDS FOR THE APPARENT PROPERTIES OF SPATIALLY RANDOM COMPOSITES

Friday, 11:30-13:30, Leda

Kenjiro Terada, Seishiro Matsubara

9437 INVESTIGATION OF SELF-HEATING EFFECT IN FIBER-REINFORCED THERMOPLASTIC RESIN BY NUMERICAL MATERIAL TESTING

Tuesday, 17:00-19:00, Apollo East

Efstathios E. Theotokoglou, George A. Balokas, Evgenia K. Savvaki

7001 A NUMERICAL STUDY FOR THE BUCKLING CAPACITY OF WIND TURBINE BLADES: GEOMETRY, LOADING AND MATERIAL INFLUENCE

Thursday, 17:00-19:00, Room 10

Olfa Trabelsi, Ambroise Duprey, Stéphane Avril

8063 ON-GOING RESEARCHES FOR NEW PERSONALIZED RISK OF RUPTURE FOR ASCENDING THORACIC ANEURYSMS

Thursday, 8:30-10:30, Minos South

Harald van Brummelen, Mahnaz Shokrpour Roudbari, Gertjan van Zwieten, Herman Wijshoff

11007 COMPLEX-FLUID-SOLID INTERACTION BASED ON THE NAVIER-STOKES-CAHN-HILLIARD PHASE-FIELD EQUATIONS

Wednesday, 17:15-19:15, Minos East

Yuri Vassilevski, Timur Gamilov, Philip Kopylov

8793 PERSONALIZED COMPUTATION OF FRACTIONAL FLOW RESERVE IN CASE OF TWO CONSECUTIVE STENOSES

Tuesday, 17:00-19:00, Zeus East

Clemens Verhoosel, Gertjan van Zwieten

7720 AN INTERFACE-BASED TESSELLATION PROCEDURE FOR THE NUMERICAL INTEGRATION OF TRIMMED ELEMENTS IN THE ISOGEOMETRIC FINITE CELL METHOD

Thursday, 8:30-10:30, Zeus North

Irene Vignon-Clementel

8593 STRATEGIES FOR CARDIOVASCULAR AND RESPIRATORY MULTISCALE MODELING PARAMETRIZATION

Tuesday, 8:30-10:30, Apollo East

Peter Vincent

9345 TOWARDS THE INDUSTRIAL ADOPTION OF GPU-ACCELERATED HIGH-ORDER COMPUTATIONAL FLUID DYNAMICS

Friday, 9:00-11:00, Room 21

Miguel Arriaga, Haim Waisman

9300 STABILITY ANALYSIS OF THE PHASE FIELD METHOD FOR FRACTURE MECHANICS

Friday, 11:30-13:30, Room 18

Wolfgang A. Wall, Christian J. Roth, Anna Birzle, Lena Yoshihara

11236 COMPREHENSIVE AND PATIENT-SPECIFIC COMPUTATIONAL LUNG MODELING AND A NOVEL VALIDATION APPROACH

Wednesday, 11:00-13:00, Zeus East

Nils Wedi

5857 THE EVOLVING STATE-OF-THE-ART IN GLOBAL NUMERICAL WEATHER PREDICTION

Tuesday, 14:30-16:30, Room 21

Mary Wheeler

10863 COMPUTATIONAL SCREENING TOOLS FOR MODELING ENERGY PROBLEMS IN POROUS MEDIA

Monday, 14:00-16:00, Minos East

Reza Mousavi, Masoud D. Champiri, Kaspar J Willam

12018 EFFICIENCY OF DAMAGE-PLASTICITY MODELS IN CAPTURING COMPACTION-EXPANSION TRANSITION OF CONCRETE UNDER DIFFERENT COMPRESSION LOADING CONDITIONS

Wednesday, 17:15-19:15, Room 9

P. Wriggers, J. Schroeder, F. Auricchio

16533 FINITE ELEMENT FORMULATIONS FOR LARGE STRAINS IN ANISOTROPIC MATERIALS

Tuesday, 14:30-16:30, Apollo East

Julien Yvonnet, Thanh Tung Nguyen, Michel Bornert, Camille Chateau, Qizhi Zhu

4676 PHASE FIELD MODELING OF COMPLEX MATRIX/INTERFACIAL CRACK PROPAGATION IN COMPLEX MICROSTRUCTURES OBTAINED FROM MICROTOMOGRAPHY IMAGES

Wednesday, 17:15-19:15, Room 18

Jarle Sogn, Walter Zulehner

8500 ROBUST PRECONDITIONERS FOR OPTIMALITY SYSTEMS USING ISOGEOMETRIC ANALYSIS

Monday, 14:00-16:00, Zeus North

Minisymposia

100 BIOLOGICAL SYSTEMS

MS 102: COMPUTATIONAL MODELS IN BIOMECHANICS AND MECHANOBIOLOGY

MS Organizers: Estefania Peña, Renato Natal Jorge, Miguel A. Martínez, Pedro S. Martins

MS 102 – 1	Thursday,	14:30-16:30,	Aphrodite
MS 102 – 2	Thursday,	17:00-19:00,	Aphrodite

MS 103: MECHANICS OF BIOLOGICAL TISSUES

MS Organizers: Markus Böhl, Gerhard A. Holzapfel

MS 103 – 1	Wednesday,	8:30-10:30,	Aphrodite
MS 103 – 2	Wednesday,	11:00-13:00,	Aphrodite
MS 103 – 3	Wednesday,	17:15-19:15,	Aphrodite
MS 103 – 4	Thursday,	8:30-10:30,	Aphrodite

MS 104: GROWTH AND REMODELLING OF LIVING TISSUES IN EXPERIMENT AND SIMULATION

MS Organizers: Antonio Bolea - Albero, Markus Böhl

MS 104 – 1	Tuesday,	14:30-16:30,	Aphrodite
MS 104 – 2	Tuesday,	17:00-19:00,	Aphrodite

MS 105: SIMULATION OF CARDIOVASCULAR PROCEDURES AND DEVICES

MS Organizers: Ferdinando Auricchio, Michele Conti, Simone Morganti, Alessandro Reali, Alessandro Veneziani

MS 105 – 1	Tuesday,	14:30-16:30,	Zeus East
MS 105 – 2	Tuesday,	17:00-19:00,	Zeus East

MS 106: DIRECT AND INVERSE METHODS FOR CARDIOVASCULAR AND PULMONARY BIOMECHANICS

MS Organizers: Wolfgang A. Wall, C. Alberto Figueroa, Marek Behr

MS 106 – 1	Tuesday,	8:30-10:50,	Apollo East
MS 106 – 2	Wednesday,	8:30-10:30,	Zeus East
MS 106 – 3	Wednesday,	11:00-13:00,	Zeus East

MS 107: MULTI-SCALE MODELS IN BIOMECHANICS AND MECHANOTRANSDUCTION

MS Organizers: Suveranu De, Michael Sacks, Abdul Barakat

MS 107	Friday,	11:30-13:30,	Room 10
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MS 108: NUMERICAL METHODS FOR COUPLED PROBLEMS IN BIOMEDICAL APPLICATIONS

MS Organizers: Martina Bukac, Annalisa Quaini

MS 108 – 1	Thursday,	14:30-16:30,	Danae
MS 108 – 2	Thursday,	17:00-19:00,	Danae

MS 109: ADVANCED ANALYSIS OF MATERIALS & STRUCTURAL SOLUTIONS IN SAFETY & BIOMECHANICS

MS Organizers: Jerzy Malachowski, Piotr W. Sielicki

MS 109 – 1	Thursday,	8:30-10:30,	Room 8
MS 109 – 2	Thursday,	14:30-16:30,	Room 8

MS 110: COMPUTATIONAL BONE MECHANICS

MS Organizers: Bernd Markert, Udo Nackenhorst, Martin Ruess

MS 110	Wednesday,	17:15-19:15,	Room 21
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MS 111: POPULATION BALANCE MODELING: CURRENT STATUS, FUTURE PROSPECTS AND NOVEL APPLICATIONS FROM NANOPARTICLES' SYNTHESIS TO (LUNG) CANCER

MS Organizers: Georgios Lolas, Georgios Bourantas, Panagiotis Gavrilidis, Konstantinos Syrigos

MS 111	Tuesday,	14:30-16:30,	Room 20
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MS 112: ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBIOLOGY

MS Organizers: Christian J. Cyron, Sven Hirsch, Philippe Blijlenberg, Roland C. Aydin, Anne M. Robertson, Gerhard A. Holzapfel

MS 112 – 1	Tuesday,	14:30-16:50,	Zeus West
MS 112 – 2	Tuesday,	17:00-19:00,	Zeus West
MS 112 – 3	Wednesday,	8:30-10:30,	Zeus West
MS 112 – 4	Wednesday,	11:00-13:00,	Zeus West
MS 112 – 5	Wednesday,	17:15-19:15,	Minos South
MS 112 – 6	Thursday,	8:30-10:30,	Minos South

MS 113: MATHEMATICAL AND NUMERICAL MODELING OF THE HEART

MS Organizers: Luca Dede', Luca Pavarino, Alfio Quarteroni

MS 113 – 1	Tuesday,	14:30-16:30,	Artemis
MS 113 – 2	Tuesday,	17:00-19:00,	Artemis
MS 113 – 3	Wednesday,	8:30-10:30,	Artemis
MS 113 – 4	Wednesday,	17:15-19:15,	Zeus East-West

MS 114: COMPUTER MODELING OF BALANCE AND HEARING DISORDERS

MS Organizers: Nenad Filipovic, Thanos Bibas

MS 114	Wednesday,	8:30-10:30,	Room 7
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MS 115: TUMOR GROWTH MODELING AND THE MECHANICAL ASPECTS OF CANCER

MS Organizers: Hector Gomez, Assad Oberai, Krishna Garikipati, Kristen Mills, Thomas J.R. Hughes

MS 115 – 1	Tuesday,	8:30-10:30,	Room 20
MS 115 – 2	Tuesday,	14:30-16:30,	Room 20

MS 116: MULTISCALE & MULTILEVEL MODELING IN DETOXIFYING ORGANS AND ORGANS OF THE DIGESTIVE TRACT

MS Organizers: Dirk Drasdo, Irene Vignon-Clementel

MS 116	Tuesday,	17:00-19:20,	Room 20
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200 DAMAGE, FRACTURE AND FAILURE

MS 201: MICROSTRUCTURE-DRIVEN DEFORMATION AND FAILURE IN CRYSTALLINE MATERIALS

MS Organizers: Pilar Ariza, Lucia Nicola, Angelo Simone

MS 201 – 1	Thursday,	8:30-10:30,	Antigoni
MS 201 – 2	Thursday,	14:30-16:30,	Antigoni
MS 201 – 3	Thursday,	17:00-19:00,	Antigoni
MS 201 – 4	Friday,	9:00-11:00,	Antigoni

MS 202: CIVIL ENGINEERING MATERIALS AND STRUCTURES UNDER EXTREME LOADINGS

MS Organizers: Fabrice Gatuingt, Frédéric Dufour, Panagiotis Kotronis

MS 202 – 1	Thursday,	17:00-19:00,	Leda
MS 202 – 2	Friday,	9:00-11:00,	Leda

MS 203: COMPUTATIONAL METHODS FOR MODELLING INSTABILITIES IN SOLIDS & STRUCTURES

MS Organizers: Spyros A. Karamanos

MS 203	Wednesday,	17:15-19:15,	Room 9
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MS 204: IMPACT AND CRASH MECHANICS

MS Organizers: Manfred Bischoff, Fabian Duddeck

MS 204 – 1	Thursday,	8:30-10:30,	Apollo West
MS 204 – 2	Thursday,	14:30-16:30,	Apollo West
MS 204 – 3	Thursday,	17:00-19:00,	Apollo West

MS 205: PROBABILISTIC APPROACH TO NUMERICAL SIMULATION OF FRACTURE

MS Organizers: Alexander V. Gerasimov

MS 205	Friday,	9:00-11:00,	Apollo West
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300 DISCRETIZATION METHODS, GRID, MESH AND SOLID GENERATION

MS 301: METHODS FOR CUT AND COMPOSITE MESHES: THEORY, ALGORITHMS AND APPLICATIONS

MS Organizers: Mats G. Larson, André Massing

MS 301 – 1	Tuesday,	8:30-10:30,	Minos North
MS 301 – 2	Tuesday,	14:30-16:30,	Minos North
MS 301 – 3	Tuesday,	17:00-19:00,	Minos North
MS 301 – 4	Wednesday,	8:30-10:30,	Minos North

MS 302: MESH GENERATION AND ADAPTION

MS Organizers: Josep Sarrate, Xevi Roca, Rafael Montenegro, Eloi Ruiz

MS 302 – 1	Monday,	14:00-16:00,	Athena
MS 302 – 2	Monday,	16:30-18:30,	Athena

MS 303: CURVED MESH GENERATION FOR HIGH-ORDER METHODS

MS Organizers: Xevi Roca, Josep Sarrate

MS 303 – 1	Monday,	14:00-16:00,	Apollo East
MS 303 – 2	Monday,	16:30-18:30,	Apollo East

MS 304: COMPUTATIONAL MODELLING OF ADDITIVE PRODUCTION PROCESSES

MS Organizers: Dirk Hartmann, Stefan Kollmannsberger, Ernst Rank, Utz Wever

MS 304	Monday,	14:00-16:00,	Danae
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MS 305: ADVANCED MESHING METHODS FOR INDUSTRIAL APPLICATIONS

MS Organizers: Frederic Alauzet, Thierry Coupez, Alain Dervieux, Adrien Loseille

MS 305 – 1	Tuesday,	14:30-16:30,	Room 2
MS 305 – 2	Tuesday,	17:00-19:00,	Room 2

MS 306: LATTICE SPRING METHODS FOR LINEAR AND NONLINEAR CONTINUA

MS Organizers: Ioannis Doltsinis

MS 306	Tuesday,	8:30-10:30,	Room 3
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MS 307: ADVANCES IN FINITE ELEMENT METHODS FOR TETRAHEDRAL MESH COMPUTATIONS

MS Organizers: Guglielmo Scovazzi, Antonio J. Gil, Micheal W. Gee

MS 307	Wednesday,	8:30-10:30,	Room 15
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MS 308: ADVANCES IN RAPID CAX

MS Organizers: Michael Breitenberger

MS 308	Monday,	14:00-16:00,	Room 3
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400 FLOW PROBLEMS

MS 403: PARTICLE-BASED METHODS IN FLUID MECHANICS

MS Organizers: Sergio Idelsohn, Eugenio Oñate

MS 403 – 1	Wednesday,	11:00-13:00,	Minos North
MS 403 – 2	Thursday,	8:30-10:30,	Zeus East
MS 403 – 3	Thursday,	14:30-16:30,	Zeus East
MS 403 – 4	Thursday,	17:00-19:00,	Artemis
MS 403 – 5	Friday,	9:00-11:00,	Zeus East

MS 404: SIMULATION OF ENVIRONMENTAL FLOWS

MS Organizers: Pablo Ortiz, Piotr K. Smolarkiewicz, Joanna Szmelter

MS 404 – 1	Tuesday,	14:30-16:30,	Room 21
MS 404 – 2	Tuesday,	17:00-19:00,	Room 21
MS 404 – 3	Wednesday,	8:30-10:30,	Room 21
MS 404 – 4	Wednesday,	11:00-13:00,	Room 21

MS 405: COMPUTATIONAL MODELING OF MULTIPHASE FLOWS: ADVANCED METHODS, INTERFACE PHENOMENA AND ENVIRONMENTAL APPLICATIONS

MS Organizers: Adeline Montlaur, Santiago Arias Calderón, Martin Kronbichler

MS 405	Wednesday,	17:15-19:15,	Artemis
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500 HIGH PERFORMANCE COMPUTING

MS 406: ADVANCES IN COMPUTATIONAL METHODS FOR GAS-LIQUID TWO-PHASE FLOW

MS Organizers: Byeong Rog Shin, Takeo Kajishima

MS 406 Wednesday, 17:15-19:15, Room 2

MS 408: MANIPULATION AND CONTROL OF TURBULENT FLOW

MS Organizers: Markus Rütten, Christina Voß

MS 408 – 1 Wednesday, 11:00-13:20, Minos South
MS 408 – 2 Wednesday, 17:15-19:15, Minos South

MS 409: CURRENT TRENDS IN MODELLING AND SIMULATION OF TURBULENT FLOWS

MS Organizers: Suad Jakirlić

MS 409 – 1 Wednesday, 8:30-10:30, Room 1
MS 409 – 2 Wednesday, 11:00-13:00, Room 1
MS 409 – 3 Thursday, 8:30-10:30, Room 3

MS 410: COMPLEX FLUID FLOWS IN ENGINEERING: MODELLING, SIMULATION AND OPTIMIZATION

MS Organizers: Stefanie Elgeti, Philipp Knechtges

MS 410 – 1 Wednesday, 8:30-10:30, Room 11
MS 410 – 2 Wednesday, 11:00-13:00, Room 11
MS 410 – 3 Wednesday, 17:15-19:35, Room 11

MS 411: NON-NEWTONIAN HEAT AND FLUID FLOW SUBJECTED TO MAGNETIC FORCES

MS Organizers: Laszlo Konozsy, Dimitris Drikakis

MS 411 Friday, 9:00-11:00, Europa

MS 412: NUMERICAL METHODS FOR WAVES AND FLOWS IN COASTAL AND DEEP WATER HYDRODYNAMICS

MS Organizers: Nina Shokina, Yuri Shokin, Leonid Chubarov, Gayaz Khakimzyanov, Vadym Aizinger, Denys Dutykh

MS 412 Thursday, 14:30-16:30, Room 1

MS 413: COMPUTATIONAL METHODS IN ENVIRONMENTAL FLUID MECHANICS

MS Organizers: Kazuo Kashiyama, Etahn Kubatko, Joannes Westerink

MS 413 – 1 Thursday, 14:30-16:30, Room 2
MS 413 – 2 Thursday, 17:00-19:00, Room 2

MS 414: NEW TRENDS IN NUMERICAL METHODS FOR MULTI-MATERIAL COMPRESSIBLE FLUID FLOWS

MS Organizers: Andy Barlow, Michael Dumbser, Raphaël Loubère, Pierre-Henri Maire, Rob Rieben, Mikhail Shashkov, François Vilar

MS 414 – 1 Wednesday, 11:00-13:20, Room 10
MS 414 – 2 Wednesday, 17:15-19:15, Room 10

MS 415: COMPUTATIONAL NON-NEWTONIAN FLUID MECHANICS

MS Organizers: Georgios Georgiou, John Tsamopoulos

MS 415 Tuesday, 14:30-16:30, Room 9

MS 501: ALGORITHMIC ASPECTS OF HIGH-PERFORMANCE COMPUTING FOR MECHANICS AND PHYSICS

MS Organizers: Santiago Badia, Victor Calo, Javier Principe

MS 501 – 1 Monday, 14:00-16:00, Minos East
MS 501 – 2 Monday, 16:30-18:30, Minos East
MS 501 – 3 Tuesday, 8:30-10:30, Minos East
MS 501 – 4 Tuesday, 14:30-16:30, Minos East
MS 501 – 5 Tuesday, 17:00-19:00, Minos East

MS 503: HPC-BASED SIMULATIONS FOR THE ENGINEERING REALM AND INDUSTRIAL APPLICATIONS

MS Organizers: Makoto Tsubokura, Mariano Vázquez, Takayuki Aoki

MS 503 – 1 Monday, 14:00-16:00, Minos South
MS 503 – 2 Monday, 16:30-18:30, Minos South
MS 503 – 3 Tuesday, 8:30-10:30, Minos South
MS 503 – 4 Tuesday, 14:30-16:30, Minos South

MS 504: NUMERICAL METHODS AND TOOLS FOR KEY EXASCALE COMPUTING CHALLENGES IN ENGINEERING AND APPLIED SCIENCES

MS Organizers: Eugenio Oñate, Manolis Papadrakakis, Peter Wriggers

MS 504 – 1 Wednesday, 8:30-10:30, Athena
MS 504 – 2 Wednesday, 11:00-13:00, Athena

MS 505: INTERACTIVE SIMULATIONS IN COMPUTATIONAL ENGINEERING

MS Organizers: Adrian Harwood, Petra Wenisch

MS 505 – 1 Monday, 14:00-16:00, Room 10
MS 505 – 2 Monday, 16:30-18:30, Room 10

MS 506: ACCURACY AND EFFICIENCY OF APPROXIMATE COMPUTATIONS IN SCIENCE AND ENGINEERING

MS Organizers: Aram Soroushian

MS 506 Friday, 9:00-11:00, Room 3

600 INTERDISCIPLINARY COUPLED AND CONTACT PROBLEMS

MS 601: SHOCK WAVE-BOUNDARY LAYER INTERACTION AND ITS CONTROL

MS Organizers: Piotr Doerffer, George Barakos

MS 601 Wednesday, 8:30-10:30, Room 12

MS 602: INNOVATIVE METHODS FOR FLUID-STRUCTURE-INTERACTION

MS Organizers: E. Harald van Brummelen, Roger Ohayon, Trond Kvamsdal

MS 602 – 1 Wednesday, 17:15-19:35, Minos East
MS 602 – 2 Thursday, 8:30-10:30, Minos East
MS 602 – 3 Thursday, 14:30-16:30, Minos East
MS 602 – 4 Friday, 9:00-11:00, Minos East
MS 602 – 5 Friday, 11:30-13:30, Minos East

MS 603: COMPUTATIONAL METHODS IN FLUID-STRUCTURE INTERACTION WITH IMPACT ON INDUSTRIAL APPLICATIONS	MS 613: COMPUTATIONAL STRATEGIES FOR THE SIMULATION OF TURBULENT TRANSPORT AND MIXING IN THE NATURAL ENVIRONMENT
<i>MS Organizers:</i> Elisabeth Longatte, Yannick Hoarau, Marianna Braza	<i>MS Organizers:</i> Fotis Sotiropoulos, Peter J. Diamessis
MS 603 – 1 Thursday, 14:30-16:30, Room 3 MS 603 – 2 Thursday, 17:00-19:00, Room 3	MS 613 Wednesday, 8:30-10:30, Room 8
MS 605: FRICTIONAL CONTACTS WITH LUBRICATION – BASICS AND APPLICATIONS	MS 615: COMPUTATIONAL MODELS IN MAGNETOHYDRODYNAMICS
<i>MS Organizers:</i> Michael Müller, Thomas Hagemann	<i>MS Organizers:</i> Oleg Zikanov
MS 605 Thursday, 17:00-19:20, Room 9	MS 615 Thursday, 14:30-16:30, Room 1
MS 606: COMPUTATIONAL MODELING OF HYDRAULIC FRACTURING	700 MATERIALS
<i>MS Organizers:</i> Gianluca Cusatis, Gilles Pijaudier-Cabot, Günther Meschke	MS 701: ADVANCED MATERIALS: COMPUTATIONAL ANALYSIS OF PROPERTIES AND PERFORMANCE
MS 606 – 1 Thursday, 17:00-19:00, Athena MS 606 – 2 Friday, 9:00-11:00, Athena MS 606 – 3 Friday, 11:30-13:30, Athena	<i>MS Organizers:</i> Vadim V. Silberschmidt, Valery P. Matveenko
MS 607: ADVANCES IN COMPUTATIONAL METHODS FOR LIQUID-VAPOR FLOWS WITH PHASE TRANSFER PROCESSES	MS 701 – 1 Thursday, 8:30-10:50, Room 4 MS 701 – 2 Thursday, 14:30-16:30, Room 4
<i>MS Organizers:</i> Rémi Abgrall, Pietro M. Congedo, Tore Flåtten, Bernhard Müller, Marica Pelanti, Maria Giovanna Radò	MS 702: MODELING OF NANOFILLED COMPOSITES
MS 607 – 1 Thursday, 8:30-10:30, Room 18 MS 607 – 2 Thursday, 14:30-16:30, Room 18	<i>MS Organizers:</i> Konstantinos I. Tserpes
MS 608: ADVANCES IN TIME INTEGRATION FOR SOLID, FLUID AND COUPLED SYSTEMS	MS 702 Thursday, 8:30-10:30, Room 1
<i>MS Organizers:</i> Ilinca Stanculescu, Peter Betsch	MS 703: COMPUTATIONAL MECHANICS OF WOOD MATERIALS AND TIMBER STRUCTURES
MS 608 Thursday, 8:30-10:30, Room 7	<i>MS Organizers:</i> Josef Füssl, Josef Eberhardsteiner, Erik Serrano, Michael Kaliske
MS 609: ADVANCED COMPUTATIONAL MODELING OF BATTERIES AND FUEL CELLS	MS 703 – 1 Tuesday, 8:30-10:30, Athena MS 703 – 2 Tuesday, 14:30-16:30, Athena MS 703 – 3 Tuesday, 17:00-19:00, Athena
<i>MS Organizers:</i> Edwin Knobbe, Wolfgang A. Wall	MS 705: IDENTIFICATION OF MATERIAL MODELS
MS 609 – 1 Monday, 14:00-16:00, Zeus West MS 609 – 2 Monday, 16:30-18:30, Zeus West MS 609 – 3 Tuesday, 8:30-10:30, Zeus West	<i>MS Organizers:</i> Danuta Széliga, Waclaw Kuś, Tadeusz Burczyński, Jan Kusiak
MS 610: NUMERICAL METHODS TO STUDY THE CONTACT MECHANICS OF DRY, ADHESIVE AND LUBRICATED ROUGH SURFACES	MS 705 Thursday, 14:30-16:30, Room 9
<i>MS Organizers:</i> Carmine Putignano, Daniele Dini	MS 706: MODELING OF FIBER-BASED STRUCTURES - TEXTILES AND TEXTILE REINFORCED COMPOSITES
MS 610 Friday, 11:30-13:30, Apollo West	<i>MS Organizers:</i> Yordan Kyosev, Philippe Boisse, Nahiene Hamila, Damien Durville
MS 611: ADVANCES IN IMMERSED METHODS IN FSI PROBLEMS	MS 706 Monday, 16:30-18:50, Leda
<i>MS Organizers:</i> Elie Hachem, Ramon Codina	MS 707: MICROMECHANICAL MODELLING: COMPETITION BETWEEN ANALYTICAL AND NUMERICAL METHODS
MS 611 Thursday, 17:00-19:20, Room 12	<i>MS Organizers:</i> Siegfried Schmauder, Vera Petrova
MS 612: NUMERICAL SIMULATIONS FOR SMART-CITY APPLICATIONS	MS 707 – 1 Friday, 9:00-11:00, Room 1 MS 707 – 2 Friday, 11:30-13:30, Room 1
<i>MS Organizers:</i> Julien Waeytens, Rachida Chakir	MS 708: INELASTIC PROCESSES IN HETEROGENEOUS MATERIALS
MS 612 Thursday, 14:30-16:30, Room 12	<i>MS Organizers:</i> Hermann G. Matthies, Adnan Ibrahimbegović
	MS 708 Thursday, 14:30-16:30, Zeus West

MS 709: INTEGRATED COMPUTATIONAL MATERIALS ENGINEERING - ICME

MS Organizers: Gottfried Laschet, Javier Llorca, Michele Chiumenti

MS 709 Thursday, 8:30-10:50, Room 9

MS 710: MODELING OF INTERFACE BEHAVIOR IN COMPOSITES

MS Organizers: Swantje Bargmann, Ingo Scheider, Andrew McBride

MS 710 Thursday, 8:30-10:30, Room 10

MS 711: FOURIER-BASED METHODS FOR COMPUTING THE BEHAVIOR OF HETEROGENEOUS MATERIALS DEVELOPMENTS, EXTENSIONS AND APPLICATIONS

MS Organizers: Lionel Gélibert, Hervé Moulinec, Franz Roters, François Willot

MS 711 – 1 Thursday, 8:30-10:30, Apollo East
MS 711 – 2 Thursday, 14:30-16:30, Apollo East
MS 711 – 3 Thursday, 17:00-19:00, Apollo East

MS 712: SMART MATERIAL SYSTEMS AND STRUCTURES

MS Organizers: Mieczysław Kuczma, Pavel Krejčí, Jörg Schröder, Georgios E. Stavroulakis, Gwidon Szefer

MS 712 – 1 Thursday, 14:30-16:30, Room 11
MS 712 – 2 Thursday, 17:00-19:00, Room 11

MS 713: MICROSTRUCTURE-BASED MODELLING OF HETEROGENEOUS MATERIALS

MS Organizers: Jan Zeman, Jan Novak, Guillermo Díaz

MS 713 – 1 Friday, 9:00-11:00, Apollo East
MS 713 – 2 Friday, 11:30-13:30, Apollo East

MS 714: STRENGTH, FATIGUE AND STABILITY OF COMPOSITE STRUCTURES

MS Organizers: Raimund Rolfes, Martin Ruess, Kai-Uwe Schröder

MS 714 – 1 Wednesday, 8:30-10:30, Europa
MS 714 – 2 Wednesday, 11:00-13:00, Europa

MS 715: COMPUTATIONAL ANALYSIS OF COMPOSITE STRUCTURES

MS Organizers: Efstathios E. Theotokoglou

MS 715 – 1 Thursday, 14:30-16:30, Room 10
MS 715 – 2 Thursday, 17:00-19:00, Room 10

800 MULTISCALE PROBLEMS

MS 801: MULTISCALE COMPUTATIONAL HOMOGENIZATION FOR BRIDGING SCALES IN THE MECHANICS AND PHYSICS OF COMPLEX MATERIALS

MS Organizers: Julien Yvonnet, Kenjiro Terada, Peter Wriggers, Marc Geers

MS 801 – 1 Tuesday, 14:30-16:30, Apollo East
MS 801 – 2 Tuesday, 17:00-19:00, Apollo East
MS 801 – 3 Wednesday, 8:30-10:30, Apollo East
MS 801 – 4 Wednesday, 11:00-13:00, Apollo East
MS 801 – 5 Wednesday, 17:15-19:15, Apollo East

MS 802: ADVANCES IN THE MODELLING OF MULTI-SCALE, MULTI-PHYSICS AND MULTI-UNCERTAINTY PROBLEMS

MS Organizers: Francisco M. Andrade Pires, Chengfeng Li

MS 802 – 1 Friday, 9:00-11:00, Room 8
MS 802 – 2 Friday, 11:30-13:30, Room 8

MS 804: MULTISCALE AND COMPUTATIONAL APPROACHES TO FRACTURE AND FAILURE

MS Organizers: Haim Waisman, Caglar Oskay

MS 804 – 1 Wednesday, 17:15-19:15, Room 15
MS 804 – 2 Friday, 9:00-11:00, Room 18
MS 804 – 3 Friday, 11:30-13:30, Room 18

MS 805: ADVANCED MULTI-PHYSICS AND MULTI-SCALE TECHNIQUES FOR MODELING INELASTIC PROCESSES IN SOLIDS: DAMAGE, FRACTURE AND CONTACT MECHANICS

MS Organizers: Mauro Corrado, Marco Paggi, José Reinoso

MS 805 – 1 Friday, 9:00-11:00, Aphrodite
MS 805 – 2 Friday, 11:30-13:30, Aphrodite

MS 806: MULTISCALE MODELLING OF MATERIALS AND STRUCTURES

MS Organizers: Tadeusz Buczyński, Xavier Oliver, Maciej Pietrzyk, Alfredo Huespe

MS 806 – 1 Tuesday, 8:30-10:30, Antigoni
MS 806 – 2 Tuesday, 14:30-16:30, Antigoni
MS 806 – 3 Tuesday, 17:00-19:00, Antigoni
MS 806 – 4 Wednesday, 8:30-10:30, Antigoni
MS 806 – 5 Wednesday, 11:00-13:00, Antigoni

MS 807: ADVANCED COMPUTATIONAL STRATEGIES FOR MODELLING, SIMULATION AND CHARACTERISATION OF MULTI-SCALE HETEROGENEOUS MATERIALS

MS Organizers: Stéphane Bordas, Daniel Dias-da-Costa, Fabrice Pierron, Timon Rabczuk, Pierre Kerfriden, Pascal Lava

MS 807 Thursday, 14:30-16:30, Zeus West

MS 808: MULTISCALE AND MULTIPHYSICS MODELING OF CEMENTITIOUS MATERIALS

MS Organizers: Jörg F. Unger, Thomas Titscher

MS 808 – 1 Friday, 9:00-11:00, Room 7
MS 808 – 2 Friday, 11:30-13:30, Room 7

MS 809: MULTISCALE STOCHASTIC FINITE ELEMENT METHODS

MS Organizers: George Stefanou, Xi Frank Xu, Yu Ching Wu

MS 809 Thursday, 17:00-19:00, Room 18

MS 810: CONSIDERING THE VERY SMALL SCALES IN COMPUTATIONAL MECHANICS: ATOMISTIC AND QUANTUM MECHANICS-BASED METHODS

MS Organizers: Amelie Fau, Roger Sauer

MS 810 Wednesday, 11:00-13:00, Athena

MS 811: MULTISCALE MODELING OF CONCRETE AND CONCRETE STRUCTURES

MS Organizers: Herbert Mang, Yong YUAN

MS 811 Thursday, 14:30-16:30, Room 17

900 NUMERICAL SIMULATION METHODS**MS 901: ISOGEOMETRIC METHODS**

MS Organizers: Yuri Bazilevs, David J. Benson, Rene De Borst, Thomas J.R. Hughes, Trond Kvamsdal, Alessandro Reali, Giancarlo Sangalli, Clemens V. Verhoosel

MS 901 – 1 Tuesday, 14:30-16:30, Zeus North
MS 901 – 2 Tuesday, 17:00-19:00, Zeus North
MS 901 – 3 Wednesday, 8:30-10:30, Zeus North
MS 901 – 4 Wednesday, 11:00-13:00, Zeus North
MS 901 – 5 Wednesday, 17:15-19:15, Zeus North
MS 901 – 6 Thursday, 8:30-10:30, Zeus North
MS 901 – 7 Thursday, 14:30-16:30, Zeus North

MS 902: INNOVATIVE NUMERICAL APPROACHES FOR MULTI-PHYSICS PROBLEMS

MS Organizers: Anna Pandolfi, Laurent Stainier, Kerstin Weinberg

MS 902 – 1 Monday, 14:00-16:00, Room 22
MS 902 – 2 Monday, 16:30-18:30, Room 22

MS 903: ADVANCES IN FICTITIOUS DOMAIN METHODS FOR SOLID MECHANICS

MS Organizers: Alexander Düster, Ernst Rank, Stefan Kollmannsberger, Andreas Schröder

MS 903 – 1 Monday, 14:00-16:00, Artemis
MS 903 – 2 Monday, 16:30-18:30, Artemis
MS 903 – 3 Tuesday, 8:30-10:30, Artemis

MS 904: ADVANCED MINIMIMAL RESIDUAL DISCRETIZATION

MS Organizers: Carsten Carstensen, Dietmar Gallistl

MS 904 – 1 Thursday, 8:30-10:30, Leda
MS 904 – 2 Thursday, 14:30-16:30, Leda

MS 905: DISCONTINUOUS GALERKIN METHODS: NEW TRENDS AND APPLICATIONS

MS Organizers: Sonia Fernández-Méndez, Nicoletta Franchina

MS 905 – 1 Wednesday, 11:00-13:00, Room 15
MS 905 – 2 Thursday, 8:30-10:30, Room 20
MS 905 – 3 Thursday, 14:30-16:30, Room 20
MS 905 – 4 Thursday, 17:00-19:00, Room 20
MS 905 – 5 Friday, 9:00-11:00, Room 20

MS 906: MATHEMATICAL ADVANCES IN ISOGEOMETRIC ANALYSIS

MS Organizers: Annalisa Buffa, John A. Evans, Thomas J.R. Hughes, Giancarlo Sangalli

MS 906 – 1 Monday, 14:00-16:00, Zeus North
MS 906 – 2 Monday, 16:30-18:30, Zeus North
MS 906 – 3 Tuesday, 8:30-10:30, Zeus North

MS 907: REGULARIZED ENRICHED APPROXIMATIONS AND QUADRATURE FOR DISCONTINUITIES, SINGULARITIES AND CONTINUOUS-DISCONTINUOUS TRANSITION

MS Organizers: Elena Benvenuti, Giulio Ventura, José M.A. César de Sá

MS 907 – 1 Wednesday, 8:30-10:30, Room 20
MS 907 – 2 Wednesday, 11:00-13:00, Room 20
MS 907 – 3 Wednesday, 17:15-19:15, Room 20

MS 908: VERIFICATION AND VALIDATION OF STRUCTURAL MECHANICS SIMULATION MODELS

MS Organizers: George Lampeas

MS 908 – 1 Friday, 9:00-11:00, Room 9
MS 908 – 2 Friday, 11:30-13:30, Room 9

MS 910: HIGH ORDER CFD METHODS: CONCLUSIONS AND OUTLOOK

MS Organizers: Koen Hillewaert, John Ekaterinaris, Peter Vincent, Norbert Kroll, Norbert Huynh, Z.J. Wang

MS 910 – 1 Thursday, 17:00-19:00, Room 21
MS 910 – 2 Friday, 9:00-11:00, Room 21
MS 910 – 3 Friday, 11:30-13:30, Room 21

MS 911: NUMERICAL METHODS IN THE MECHANICS OF GENERALIZED CONTINUA

MS Organizers: Elena Atroschenko, Jack S. Hale, George Bourantas, Stéphane P.A. Bordas

MS 911 – 1 Thursday, 8:30-10:30, Room 5
MS 911 – 2 Thursday, 14:30-16:30, Room 5

MS 912: HIGH-ORDER METHODS, SENSITIVITY ANALYSIS AND ADAPTATION FOR THE NAVIER STOKES EQUATIONS

MS Organizers: Vincent Couaillier, Rémi Abgrall, Eusebio Valero

MS 912 – 1 Thursday, 14:30-16:30, Room 5
MS 912 – 2 Thursday, 17:00-19:00, Room 5

MS 913: HIGH-ORDER METHODS FOR POLYGONAL AND POLYHEDRAL MESHES

MS Organizers: Lourenço Beirão da Veiga, Franco Brezzi, Donatella Marini, Alessandro Russo

MS 913 – 1 Monday, 14:00-16:00, Room 23
MS 913 – 2 Monday, 16:30-18:50, Room 23
MS 913 – 3 Tuesday, 8:30-10:30, Zeus East

MS 914: INNOVATIVE NON-BOUNDARY-FITTED DISCRETIZATION METHODS

MS Organizers: Fehmi Cirak, John E. Dolbow, Isaac Harari, Ming-Chen Hsu, Thomas J.R. Hughes, Dominik Schillinger

MS 914 – 1 Monday, 14:00-16:00, Europa
MS 914 – 2 Monday, 16:30-18:30, Europa

MS 916: DIRECT METHODS FOR LIMIT STATES OF MATERIALS AND STRUCTURES

MS Organizers: Konstantinos V. Spiliopoulos, Dieter Weichert

MS 916 – 1 Monday, 14:00-16:00, Room 11
MS 916 – 2 Monday, 16:30-18:30, Room 11

MS 917: MESOSCOPIC METHODS FOR COMPLEX FLUIDS AND SOFT MATTER

MS Organizers: Zhen Li, Wenxiao Pan, Igor V. Pivkin

MS 917 – 1 Monday, 14:00-16:00, Room 12
MS 917 – 2 Monday, 16:30-18:30, Room 12

MS 918: COMPUTER ALGEBRA SYSTEMS IN MODELLING STATIC AND DYNAMIC PROBLEMS IN MECHANICS OF SOLIDS

MS Organizers: Alexander V. Matrosov, Dmitriy P. Goloskokov

MS 918 Thursday, 8:30-10:30, Room 11

MS 919: RECENT ADVANCES IN NUMERICAL SIMULATION AND ANALYSIS OF KINETIC MODELS

MS Organizers: E. Harald van Brummelen, Manuel Torrilhon

MS 919 – 1 Tuesday, 8:30-10:30, Apollo West
MS 919 – 2 Tuesday, 14:30-16:30, Apollo West
MS 919 – 3 Tuesday, 17:00-19:00, Apollo West

MS 921: RECENT ADVANCES IN BOUNDARY ELEMENT METHODS

MS Organizers: Gernot Beer, Luiz Wrobel, Martin Schan

MS 921 – 1 Monday, 14:00-16:00, Aphrodite
MS 921 – 2 Monday, 16:30-18:30, Aphrodite
MS 921 – 3 Tuesday, 8:30-10:30, Aphrodite

MS 922: HIGH-ORDER METHODS FOR ELASTIC WAVES AND THEIR APPLICATION

MS Organizers: Thomas Hagstrom, Daniel Appelo

MS 922 – 1 Friday, 9:00-11:00, Minos North
MS 922 – 2 Friday, 11:30-13:30, Minos North

MS 923: NOVEL DISCRETIZATION METHODS – MATHEMATICAL AND MECHANICAL ASPECTS

MS Organizers: Jörg Schröder, Peter Wriggers, Ferdinando Auricchio, Carsten Carstensen

MS 923 – 1 Wednesday, 8:30-10:30, Danae
MS 923 – 2 Wednesday, 11:00-13:00, Danae
MS 923 – 3 Wednesday, 17:15-19:15, Danae

1000 OPTIMIZATION, INVERSE PROBLEMS AND CONTROL

MS 1001: STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION

MS Organizers: J.F. Aguilar Madeira, Helder C. Rodrigues

MS 1001 – 1 Monday, 16:30-18:30, Danae
MS 1001 – 2 Tuesday, 8:30-10:30, Danae
MS 1001 – 3 Tuesday, 14:30-16:30, Danae
MS 1001 – 4 Tuesday, 17:00-19:00, Danae
MS 1001 – 5 Wednesday, 8:30-10:30, Leda
MS 1001 – 6 Wednesday, 11:00-13:00, Leda
MS 1001 – 7 Wednesday, 17:15-19:15, Leda

MS 1002: EVOLUTIONARY ALGORITHMS AND METAHEURISTICS IN CIVIL ENGINEERING AND CONSTRUCTION MANAGEMENT

MS Organizers: Jorge Magalhaes-Mendes, David Greiner

MS 1002 Wednesday, 17:15-19:15, Room 1

MS 1003: ADVANCES IN DESIGN OPTIMIZATION OF STRUCTURES AND MATERIALS

MS Organizers: Zhen Luo, Zhan Kang

MS 1003 – 1 Wednesday, 11:00-13:00, Room 12
MS 1003 – 2 Wednesday, 17:15-19:15, Room 12
MS 1003 – 3 Thursday, 8:30-10:30, Room 12

MS 1004: AERODYNAMIC STRATEGIES FOR THE GLOBAL OPTIMIZATION OF FLYING CONFIGURATIONS IN SUPERSONIC FLOW

MS Organizers: Adriana Nastase, Catalin Nae

MS 1004 Thursday, 17:00-19:00, Room 15

MS 1005: MONITORING AND CONTROL OF STRUCTURES

MS Organizers: Resat Oyguc

MS 1005 Monday, 14:00-16:00, Leda

MS 1006: PARAMETER IDENTIFICATION IN SOLID MECHANICS

MS Organizers: A. Gil Andrade-Campos, Marco Rossi, Sandrine Thuillier, Franck Toussaint, Marta C. Oliveira

MS 1006 Wednesday, 17:15-19:35, Room 3

MS 1007: ADDITIVE MANUFACTURING AND OPTIMIZATION

MS Organizers: Ekkehard Ramm, Ole Sigmund, Pierre Duysinx, Wing Kam Liu

MS 1007 – 1 Tuesday, 17:00-19:00, Room 18
MS 1007 – 2 Wednesday, 8:30-10:30, Room 18
MS 1007 – 3 Wednesday, 11:00-13:00, Room 18
MS 1007 – 4 Wednesday, 17:15-19:15, Room 18
MS 1007 – 5 Thursday, 8:30-10:30, Zeus West

MS 1008: ULTRASONIC GUIDED WAVES TESTING AND MONITORING

MS Organizers: Yaacoubi Slah, Nico Declercq

MS 1008 Friday, 11:30-13:30, Minos North

MS 1009: ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION

MS Organizers: Kyriakos C. Giannakoglou, Jens Dominik Mueller

MS 1009 – 1 Tuesday, 14:30-16:30, Room 23
MS 1009 – 2 Wednesday, 8:30-10:30, Room 23
MS 1009 – 3 Wednesday, 11:00-13:00, Room 23
MS 1009 – 4 Wednesday, 17:15-19:15, Room 23
MS 1009 – 5 Thursday, 8:30-10:30, Room 23
MS 1009 – 6 Thursday, 14:30-16:30, Room 23
MS 1009 – 7 Thursday, 17:00-19:00, Room 23

MS 1010: INVERSE PROBLEMS, DESIGN AND OPTIMIZATION

MS Organizers: Marcelo J. Colaço, Helcio R. B. Orlande, George S. Dulikravich

MS 1010 Friday, 9:00-11:00, Room 5

MS 1011: SURROGATE-ASSISTED EVOLUTIONARY ALGORITHMS IN AERODYNAMIC DESIGN/OPTIMIZATION

MS Organizers: Varvara Asouti, Esther Andrés, Emiliano Iuliano

MS 1011 – 1	Friday,	9:00-11:00,	Room 23
MS 1011 – 2	Friday,	11:30-13:30,	Room 23

MS 1013: SOLUTION OF LARGE-SCALE INVERSE PROBLEMS

MS Organizers: Clint Dawson, Steve Mattis, Troy Butler, Lindley Graham

MS 1013	Friday,	9:00-11:20,	Room 11
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MS 1014: DESIGN OPTIMIZATION AND INVERSE PROBLEMS FOR WAVE PROPAGATION PROBLEMS

MS Organizers: Martin Berggren

MS 1014	Friday,	11:30-13:30,	Room 5
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1100 REDUCTION METHODS

MS 1101: REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES

MS Organizers: Francisco Chinesta, Elias Cueto, Antonio Huerta, Pierre Ladeveze, Gianluigi Rozza

MS 1101 – 1	Monday,	14:00-16:00,	Minos North
MS 1101 – 2	Monday,	16:30-18:30,	Minos North
MS 1101 – 3	Tuesday,	8:30-10:30,	Leda
MS 1101 – 4	Tuesday,	14:30-16:30,	Leda
MS 1101 – 5	Tuesday,	17:00-19:00,	Leda
MS 1101 – 6	Wednesday,	8:30-10:30,	Minos East
MS 1101 – 7	Wednesday,	11:00-13:00,	Minos East

MS 1102: VERIFICATION OF REDUCED MODELS IN COMPUTATIONAL MECHANICS

MS Organizers: Ludovic Chamoin, Pedro Diez, Fredrik Larsson, Kris Van der Zee

MS 1102	Wednesday,	17:15-19:35,	Athena
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MS 1103: MATHEMATICAL SURROGATE MODELLING IN ELECTROMAGNETICS

MS Organizers: Petrie Meyer, Tom Dhaene, Dirk Deschrijver

MS 1103 – 1	Thursday,	14:30-16:30,	Room 22
MS 1103 – 2	Thursday,	17:00-19:00,	Room 22

MS 1104: REDUCED-ORDER MODELS FOR PDE-CONSTRAINED OPTIMIZATION AND INVERSE PROBLEMS

MS Organizers: Alfio Quarteroni, Andrea Manzoni

MS 1104 – 1	Monday,	14:00-16:00,	Apollo West
MS 1104 – 2	Monday,	16:30-18:30,	Apollo West

1200 STRUCTURAL STABILITY AND DYNAMICS

MS 1201: COMPUTATIONAL STRUCTURAL DYNAMICS

MS Organizers: Evangelos J. Sapountzakis, Andreas E. Kampitsis

MS 1201 – 1	Wednesday,	11:00-13:00,	Room 8
MS 1201 – 2	Wednesday,	17:15-19:15,	Room 8

MS 1202: ADVANCED BEAM MODELS

MS Organizers: Dinar Camotim, Zuzana Dimitrovová, Rodrigo Gonçalves

MS 1202 – 1	Tuesday,	8:30-10:30,	Room 1
MS 1202 – 2	Tuesday,	14:30-16:30,	Room 1
MS 1202 – 3	Tuesday,	17:00-19:00,	Room 1

MS 1203: THE MODELS AND INVESTIGATIONS METHODS OF DYNAMICS OF THE SOLIDS SYSTEMS WITH DRY FRICTION

MS Organizers: Alexey A. Kirenenko, Alexander V. Karapetyan

MS 1203	Wednesday,	11:00-13:00,	Room 3
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MS 1204: NONLINEAR DYNAMICS OF ROTATING STRUCTURES

MS Organizers: Evangeline Capiez-Lernout, Marc P. Mignolet, Christian Soize

MS 1204 – 1	Thursday,	14:30-16:30,	Minos South
MS 1204 – 2	Thursday,	17:00-19:00,	Minos South

MS 1206: ADVANCES IN NUMERICAL METHODS FOR LINEAR AND NON-LINEAR DYNAMICS AND WAVE PROPAGATION

MS Organizers: Alexander Idesman

MS 1206 – 1	Tuesday,	8:30-10:30,	Room 12
MS 1206 – 2	Tuesday,	14:30-16:30,	Room 12
MS 1206 – 3	Tuesday,	17:00-19:00,	Room 12

MS 1207: COMPUTATIONAL SIMULATION OF SMART STRUCTURES AND MATERIALS

MS Organizers: Ruediger Schmidt, Kai-Uwe Schröder

MS 1207	Wednesday,	8:30-10:30,	Room 3
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MS 1208: BIFURCATIONS AND STABILITY

MS Organizers: Pekka Neittaanmäki, Nikolay Banichuk, Juha Jeronen, Tero Tuovinen

MS 1208	Thursday,	8:30-10:50,	Room 2
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MS 1209: DYNAMIC ANALYSIS OF BEAMS UNDER MOVING VEHICLES: APPLICATION TO RAILWAY TRACK MODELLING, DESIGN AND REHABILITATION

MS Organizers: Fernando Simões, Antonio Pinto da Costa

MS 1209	Thursday,	17:00-19:00,	Minos South
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MS 1210: ADVANCES IN MODELING AND ANALYSIS OF FGM STRUCTURES

MS Organizers: Justin Murin, Stephan Kugler, Mehdi Aminbaghai

MS 1210	Thursday	8:30-10:30	Artemis
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MS 1211: COMPUTATIONAL STRATEGIES FOR STRUCTURAL ROBUSTNESS ASSESSMENT

MS Organizers: Domenic Asprone, Fulvio Parisi

MS 1211	Friday,	9:00-11:00,	Room 12
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MS 1212: DYNAMICS AND SEISMIC RESPONSE OF ROCKING AND SELF-CENTERING STRUCTURES
MS Organizers: Matthew DeJong, Elias Dimitrakopoulos, Michalis Fragiadakis

MS 1212 – 1 Tuesday, 14:30-16:50, Room 10
MS 1212 – 2 Tuesday, 17:00-19:20, Room 10

MS 1213: INNOVATIVE STRUCTURAL SYSTEMS FOR SEISMIC RESISTANT BUILDINGS
MS Organizers: Carlo Castiglioni

MS 1213 Thursday, 17:00-19:00, Room 7

MS 1214: HISTORIC MASONRY STRUCTURES: MODELLING, ASSESSMENT & RETROFIT
MS Organizers: Panagiotis Asteris, Charilaos Maniatakis, Constantine Spyros

MS 1214 – 1 Tuesday, 8:30-10:30, Room 7
MS 1214 – 2 Tuesday, 14:30-16:30, Room 7
MS 1214 – 3 Tuesday, 17:00-19:20, Room 7

MS 1215: NONLINEAR VIBRATIONS OF CONSERVATIVE AND NONCONSERVATIVE SYSTEMS: PHENOMENA AND ADVANCED NUMERICAL METHODS
MS Organizers: Malte Krack, Ludovic Renson, Gaëtan Kerschen

MS 1215 – 1 Thursday, 8:30-10:30, Room 21
MS 1215 – 2 Thursday, 14:30-16:30, Room 21

MS 1216: STRUCTURAL ANALYSIS AND VIBRATIONS
MS Organizers: Diana V. Bambill, Carlos A. Rossit

MS 1216 Friday, 9:00-11:00, Room 4

MS 1217: COMPUTATIONAL METHODS IN EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS
MS Organizers: Vagelis Plevris, Georgia Kremmyda, Yasin Fahjan

MS 1217 – 1 Tuesday, 17:00-19:00, Room 9
MS 1217 – 2 Wednesday, 8:30-10:30, Room 9
MS 1217 – 3 Wednesday, 11:00-13:00, Room 9

MS 1218: STABILITY AND CONTROL OF FLEXIBLE STRUCTURES
MS Organizers: Ilaria Venanzi, Marco Lepidi

MS 1218 Monday, 14:00-16:00, Room 8

MS 1220: DYNAMICS OF STRUCTURES SUBJECT TO SEISMIC EXCITATIONS
MS Organizers: Michel Gérardin, Evtim Zahariev, Evangelos J. Sapountzakis

MS 1220 Wednesday, 8:30-10:30, Room 10

MS 1221: COMPUTATIONAL STRUCTURAL STABILITY
MS Organizers: Herbert A. Mang, Yeon-Bin Yang

MS 1221 Thursday, 17:00-19:00, Room 17

MS 1222: INFLUENCE OF LIQUEFIAZABLE SOIL ON SINGLE AND CLOSELY CLUSTERED STRUCTURES
MS Organizers: Nawawi Chouw, Rolly Orense, Tam Larkin

MS 1222 Wednesday, 11:00-13:00, Room 17

MS 1224: INNOVATIVE SOLUTIONS FOR THE SEISMIC PROTECTION OF INDUSTRIAL BUILDINGS

MS Organizers: Walter Salvatore, Carlo Castiglioni, Francesco Morelli, Nikolaos Bakas

MS 1224 Thursday, 8:30-10:50, Room 22

MS 1225: SEISMIC PERFORMANCE ASSESSMENT OF STRUCTURES AND SEISMIC RISK MITIGATION STRATEGIES

MS Organizers: Marco Vona

MS 1225 – 1 Thursday, 14:30-16:30, Room 7
MS 1225 – 2 Thursday, 17:00-19:00, Room 7

1300 UNCERTAINTY QUANTIFICATION AND ERROR ESTIMATION

MS 1301: THE STOCHASTIC COMPUTER METHODS IN MECHANICS

MS Organizers: Marcin Kamiński, Takahiko Kurahashi

MS 1301 Tuesday, 14:30-16:50, Room 3

MS 1303: ANALYSIS AND DESIGN OF SAFETY CRITICAL SYSTEMS UNDER UNCERTAINTY

MS Organizers: Edoardo Patelli, Michael Beer, Matteo Broggi, Francisco Alejandro Díaz De la O

MS 1303 Friday, 11:30-13:30, Room 2

MS 1304: STOCHASTIC MODELING AND IDENTIFICATION OF UNCERTAINTIES IN COMPUTATIONAL MECHANICS

MS Organizers: Johann Guilleminot, Maarten Arnst, Christian Soize

MS 1304 – 1 Thursday, 17:00-19:00, Room 8
MS 1304 – 2 Friday, 9:00-11:20, Room 2

MS 1305: STOCHASTIC MODELS OF FAILURE IN RANDOM HETEROGENEOUS MATERIALS AND COMPLEX NETWORKS

MS Organizers: Dionissios T. Hristopulos, Tetsu Uesaka

MS 1305 Tuesday, 8:30-10:30, Room 23

MS 1306: ERCOFATAC SIG-45: UNCERTAINTY QUANTIFICATION IN CFD AND FLUID STRUCTURE INTERACTION

MS Organizers: Didier Lucor, Sunetra Sarkar

MS 1306 – 1 Monday, 14:00-16:00, Antigoni
MS 1306 – 2 Monday, 16:30-18:30, Antigoni

MS 1307: NON-INTRUSIVE SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION IN HIGH DIMENSIONS

MS Organizers: Bruno Sudret, Eleni Chatzi, Jean-Marc Bourinet, Nicolas Gayton

MS 1307 – 1 Monday, 14:00-16:00, Room 1
MS 1307 – 2 Monday, 16:30-18:30, Room 1

MS 1308: MODELLING AND INVERSE METHODS IN NONLINEAR DYNAMICAL SYSTEMS

MS Organizers: Sotirios Natsiavas, Costas Papadimitriou, Eleni Chatzi, Dimitrios Giagopoulos

MS 1308 Wednesday, 8:30-10:30, Apollo West

MS 1309: SCALABLE MULTI-FIDELITY MODELING FOR DESIGN, UNCERTAINTY QUANTIFICATION, AND INVERSE PROBLEMS

MS Organizers: Paris Perdikaris, George Em. Karniadakis

MS 1309 – 1 Monday, 16:30-18:30, Room 1
MS 1309 – 2 Tuesday, 8:30-10:50, Room 11

MS 1310: COMPUTATIONAL METHODS FOR THE SOLUTION OF STOCHASTIC DIFFERENTIAL EQUATIONS

MS Organizers: Jianbing Chen, Ioannis Kougioumtzoglou, Vissarion Papadopoulos

MS 1310 Tuesday, 8:30-10:50, Room 11

MS 1311: ADAPTIVE METHODS FOR FORWARD AND INVERSE PROPAGATION OF UNCERTAINTY IN COMPUTATIONAL MODELS

MS Organizers: Timothy M. Wildey, Anca C. Belme

MS 1311 Friday, 9:00-11:00, Room 17

1400 SPECIAL TECHNOLOGICAL SESSIONS

MS 1401: TOICA: THERMAL OVERALL INTEGRATED CONCEPT AIRCRAFT

MS Organizers: Pierre Arbez, Jean-Claude Dunyach

MS 1401 – 1 Thursday, 8:30-10:30, Athena
MS 1401 – 2 Thursday, 14:30-16:30, Athena
MS 1401 – 3 Thursday, 17:00-19:00, Room 1

STS 1: THE CAERO2 PLATFORM: DISSEMINATION OF COMPUTATIONAL CASE STUDIES IN AERONAUTICS

MS Organizers: Pedro Diez, Jacques Periaux, Sara Guttila

STS 1 Tuesday, 17:00-19:00, Room 3

STS 2: GREEN AND SMART INTELLIGENT TRANSPORT SYSTEMS (IST): TOWARDS MORE INTEGRATED COMPUTATIONAL AND IT TOOLS FOR THE DEPLOYMENT OF NOVEL TRAVEL SERVICES

MS Organizers: Pedro Diez, P. Neittaanmaki, T. Tuovinen, Jacques Periaux

STS 2 – 1 Tuesday, 8:30-10:30, Room 18
STS 2 – 2 Tuesday, 14:30-16:30, Room 18

STS 3: INNOVATIVE DESIGN OPTIMIZATION TOOLS LINKED TO INDUSTRIAL AERONAUTICAL APPLICATIONS: TARGETING GREENER PERFORMANCES

MS Organizers: Jacques Periaux, Gabriel Bugeda

STS 3 – 1 Wednesday, 8:30-10:30, Room 2
STS 3 – 2 Wednesday, 11:00-13:00, Room 2

STS 5: TRANSITION LOCATION EFFECT ON SHOCK WAVE BOUNDARY LAYER INTERACTION

MS Organizers: Piotr Doerffer, Paweł Flaszynski

STS 5 Wednesday, 17:15-19:15, Minos North

STS 6: DRAG REDUCTION AND FLOW CONTROL TECHNOLOGIES

MS Organizers: Dietrich Knoerzer, Geza Schrauf

STS 6 Thursday, 8:30-10:30, Minos North

STS 7: MORPHING TECHNOLOGIES FOR AIRCRAFT WINGS

MS Organizers: Hans Peter Monner

STS 7 Thursday, 14:30-16:50, Artemis

STS 8: SIMULATION AND VALIDATION OF COMPOSITE STRUCTURES IN AERONAUTICS

MS Organizers: Piet Woelkens

STS 8 Thursday, 14:30-16:50, Artemis

STS 9: ADVANCED WING HIGH-LIFT SYSTEMS

MS Organizers: Jochen Wild

STS 9 Thursday, 17:00-19:00, Minos East

YOUNG INVESTIGATORS MINISYMPOSIUM

MS Organizers: Jaan-Willem Simon, Alexander Popp, Joan Baiges

MS 614 – 1 Thursday, 14:30-16:30, Minos North
MS 614 – 2 Thursday, 17:00-19:00, Minos North

This Minisymposium is organized by young investigators (all of which are members of the ECCOMAS Young Investigators Committee) for young investigators. The format is different from the typical MS to attract the interest of young researchers.

There are two types of presentations:

Presentation in pairs: Two presenters prepare and submit their abstract together. They should know each other but should not work at the same institution. The idea is to view a topic from two different perspectives, thus leading to intense discussions on pros and cons of the presented approaches. Presentations in pairs are allowed 1.5 times the time of regular talks.



Presentation of things that did not work (as expected): The presentations are dedicated to those works which did not work or lead to different outcomes than expected. This gives the chance to present “negative” results. Authors should discuss why things went “wrong” with the aim to prevent others from falling into the same traps.

ECCOMAS OLYMPIAD MINISYMPOSIUM



OLYMPIAD – 1 Wednesday, 8:30-10:50, Room 22
OLYMPIAD – 2 Wednesday, 11:00-13:00, Room 22

The ECCOMAS Olympiads are organized annually in different places in Europe, aiming at providing a forum for disseminating recent developments and sharing common research interest among young researchers, whose PhD theses were approved by a University or a Research Organization in Europe during the previous year. Awards will be given to the two best oral presentations at the Closing Ceremony of the Congress.

Contributed Sessions

CS 110: NUMERICAL MODELS IN BIOMECHANICS

CS 110 – 1	Monday,	14:00-16:00,	Room 7
CS 110 – 2	Monday,	16:30-18:30,	Room 7
CS 110 – 3	Tuesday,	8:30-10:30,	Room 8
CS 110 – 4	Tuesday,	14:30-16:30,	Room 8
CS 110 – 5	Tuesday,	17:00-19:00,	Room 8
CS 110 – 6	Wednesday,	8:30-10:30,	Room 4

CS 210: NUMERICAL SIMULATION OF COMPOSITE MATERIALS

CS 210	Monday,	14:00-16:20,	Room 4
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CS 211: CRACK PROPAGATION

CS 211	Monday,	16:30-18:30,	Room 4
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CS 212: NUMERICAL MODELING OF DAMAGE, FAILURE AND FRACTURE

CS 212 – 1	Tuesday,	8:30-10:30,	Room 4
CS 212 – 2	Tuesday,	14:30-16:30,	Room 4
CS 212 – 3	Tuesday,	17:00-19:00,	Room 4

CS 230: MODELLING OF CONCRETE AND MEASURING

CS 230	Monday,	14:00-16:00,	Room 20
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CS 310: CAD, CAM AND CAE

CS 310	Wednesday,	11:00-13:20,	Minos South
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CS 320: GRID GENERATION AND ADAPTIVE TECHNIQUES

CS 320	Thursday,	17:00-19:00,	Room 4
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CS 410: COMPUTATIONAL FLUID MECHANICS

CS 410 – 1	Tuesday,	8:30-10:30,	Europa
CS 410 – 2	Tuesday,	14:30-16:30,	Europa
CS 410 – 3	Tuesday,	17:00-19:00,	Europa
CS 410 – 4	Wednesday,	8:30-10:30,	Room 5
CS 410 – 5	Wednesday,	11:00-13:00,	Room 5
CS 410 – 6	Wednesday,	17:15-19:15,	Room 5

CS 420: MULTI-PHASE AND CHEMICALLY REACTING FLOWS

CS 420 – 1	Monday,	14:00-16:00,	Room 2
CS 420 – 2	Monday,	16:30-18:30,	Room 2
CS 420 – 3	Tuesday,	8:30-10:30,	Room 2

CS 450: NUMERICAL METHODS AND CONVERGENCE ACCELERATION IN CFD

CS 450 – 1	Wednesday,	11:00-13:00,	Apollo West
CS 450 – 2	Wednesday,	17:15-19:15,	Apollo West

CS 460: UNSTEADY FLOW COMPUTATION

CS 460 – 1	Tuesday,	8:30-10:30,	Room 5
CS 460 – 2	Tuesday,	14:30-16:30,	Room 5
CS 460 – 3	Tuesday,	17:00-19:00,	Room 5

CS 500: HIGH PERFORMANCE COMPUTING

CS 500 – 1	Tuesday,	17:00-19:00,	Minos South
CS 500 – 2	Wednesday,	8:30-10:30,	Minos South

CS 610: AERO-ACOUSTICS

CS 610	Friday,	11:30-13:30,	Room 15
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CS 620: COMPUTATIONAL CONTACT MECHANICS

CS 620 – 1	Thursday,	8:30-10:30,	Room 15
CS 620 – 2	Thursday,	14:30-16:30,	Room 15

CS 630: SIMULATION OF FLUID-STRUCTURE INTERACTION

CS 630 – 1	Wednesday,	17:15-19:15,	Europa
CS 630 – 2	Thursday,	8:30-10:30,	Europa
CS 630 – 3	Thursday,	14:30-16:30,	Europa
CS 630 – 4	Thursday,	17:00-19:00,	Europa
CS 630 – 5	Friday,	9:00-11:00,	Europa

CS 720: COMPUTATIONAL MATERIALS SCIENCE

CS 720 – 1	Wednesday,	11:00-13:00,	Room 7
CS 720 – 2	Wednesday,	17:15-19:35,	Room 7

CS 750: COMPUTATIONAL MODELING OF COMPOSITES

CS 750 – 1	Monday,	14:00-16:00,	Room 9
CS 750 – 2	Monday,	16:30-18:30,	Room 9
CS 750 – 3	Tuesday,	8:30-10:30,	Room 9

CS 751: SMART MATERIALS AND STRUCTURES

CS 751 – 1	Monday,	14:00-16:00,	Room 18
CS 751 – 2	Monday,	16:30-18:30,	Room 18

CS 830: COMPUTATIONAL NANOTECHNOLOGY

MS Organizers:
CS 830 Wednesday, 11:00-13:00, Artemis

CS 840: MULTI-SCALE COMPUTATIONAL METHODS FOR SOLIDS AND FLUIDS

CS 840 – 1	Monday,	14:00-16:00,	Room 5
CS 840 – 2	Monday,	16:30-18:30,	Room 5

CS 930: HIGH-ORDER DISCRETIZATION METHODS

CS 930 – 1	Monday,	14:00-16:00,	Room 15
CS 930 – 2	Monday,	16:30-18:30,	Room 15
CS 930 – 3	Tuesday,	8:30-10:30,	Room 15
CS 930 – 4	Tuesday,	17:00-19:00,	Room 15

CS 940: EXTENDED DISCRETIZATION METHODS

CS 940 – 1	Tuesday,	8:30-10:30,	Room 22
CS 940 – 2	Tuesday,	14:30-16:30,	Room 22

CS 960: MESHLESS METHODS

CS 960 – 1	Tuesday,	14:30-16:30,	Room 22
CS 960 – 2	Tuesday,	17:00-19:00,	Room 22

CS 980: NUMERICAL AND SYMBOLIC COMPUTATION

CS 980	Friday,	9:00-11:00,	Room 15
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CS 990: PARTICLE-BASED METHODS

CS 990 – 1	Monday,	14:00-16:00,	Zeus East
CS 990 – 2	Monday,	16:30-18:30,	Zeus East

CS 1010: COMPUTATIONAL INVERSE PROBLEMS AND OPTIMIZATION

CS 1010 – 1	Monday,	14:00-16:00,	Room 21
CS 1010 – 2	Monday,	16:30-18:30,	Room 21
CS 1010 – 3	Tuesday,	8:30-10:30,	Room 21
CS 1010 – 4	Tuesday,	14:30-16:30,	Room 17

CS 1020: EVOLUTIONARY AND DETERMINISTIC METHODS FOR DESIGN, OPTIMIZATION AND CONTROL

CS 1020 – 1	Monday,	14:00-16:00,	Room 17
CS 1020 – 2	Monday,	16:30-18:30,	Room 17
CS 1020 – 3	Tuesday,	8:30-10:30,	Room 17

CS 1100: REDUCTION ORDER METHODS

CS 1100	Thursday,	8:30-10:30,	Room 17
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CS 1200: STRUCTURAL DYNAMICS

CS 1200 – 1	Tuesday,	8:30-10:30,	Room 10
CS 1200 – 2	Tuesday,	14:30-16:30,	Room 11
CS 1200 – 3	Wednesday,	11:00-13:00,	Room 4

CS 1201: COMPUTATIONAL SOIL MECHANICS

CS 1201	Tuesday,	17:00-19:00,	Room 11
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CS 1202: STRUCTURAL ANALYSIS AND MULTI BODY DYNAMICS

CS 1202 – 1	Friday,	9:00-11:00,	Room 4
CS 1202 – 2	Friday,	11:30-13:30,	Room 4

CS 1300: UNCERTAINTY QUANTIFICATION AND ERROR ESTIMATION

CS 1300 – 1	Tuesday,	17:00-19:00,	Room 17
CS 1300 – 2	Wednesday,	8:30-10:30,	Room 17
CS 1300 – 3	Wednesday,	11:00-13:00,	Room 17

CS 1301: MOLECULAR DYNAMICS

CS 1301	Friday,	11:30-13:30,	Room 4
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DAY 1 – MONDAY, JUNE 6

7:30-8:30
Registration

OPENING & AWARDS CEREMONY

Monday, June 6 8:30-8:50	Zeus
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Welcome Adresses

Manolis Papadrakakis
Ekkehard Ramm
Wing Kam Liu

Monday, June 6 8:50-9:15	Zeus
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Presentation of ECCOMAS Awards

ECCOMAS PhD Awards
Jacques Louis Lions Award
Olgierd Cecil Zienkiewicz Award
Ludwig Prandtl Medal
Leonhard Euler Medal
Ritz-Galerkin Medal

OPENING PLENARY LECTURE

Monday, June 6 9:15-10:00	Zeus
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Chair: Ekkehard Ramm
12327 HELLENISTIC TECHNOLOGY AND THE STEAM-POWERED FORCE-PUMP
Theodosios P. Tasios

10:00-10:30

Coffee Break

PLENARY LECTURES

Monday, June 6 10:30-12:00	Zeus
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Chair: Antonio Huerta
12726 MODELING OF FIBER-REINFORCED SOLIDS WITH APPLICATION TO SOFT TISSUES
Gerhard A. Holzapfel

12169 REDUCED ORDER MODELS FOR ANALYSIS AND SYNTHESIS OF COMPLEX SYSTEMS
Alfio Quarteroni

12:00-14:00

Lunch Break

DAY 1 – MONDAY, JUNE 6

TECHNICAL SESSIONS

Monday, June 6	Zeus East
14:00-16:00	

CS 990 - 1: PARTICLE-BASED METHODS

Chair: Miquel Santasusana

- 5352** AN ALE PARTICLE METHOD USING UPWIND INTERPOLATION FOR SOLVING FLOWS WITH MOVING BOUNDARY AND FREE SURFACE
Fangyuan Hu, Seiichi Koshizuka
- 8518** DNS SIMULATION AS A TOOL FOR STUDYING LIQUID BRIDGES
Nikoletta Patsaki, Johannes Khinast, Robert Scharler
- 8868** SIMULATION OF BLUFF-BODY FLOWS USING ITERATIVE PENALIZATION IN A MULTIRESOLUTION PARTICLE-MESH VORTEX METHOD
Henrik Juul Spietz, Mads Mølholm Hejlesen, Jens Honoré Walther
- 7080** STUDY OF PARTICLES BACKFLOW IN PARTIALLY FILLED SCREW CONVEYORS
Luca Orefice, Johannes Khinast
- 10124** A STABILISED TOTAL LAGRANGIAN CORRECTED SMOOTH PARTICLE HYDRODYNAMICS TECHNIQUE IN LARGE STRAIN EXPLICIT FAST SOLID DYNAMICS
Giorgio Greto, Sivakumar Kulasegaram, Chun H. Lee, Antonio J. Gil, Javier Bonet
- 8928** GRADIENT ELASTICITY WITH THE MATERIAL POINT METHOD
T.J. Charlton, W.M. Coombs, C.E. Augarde

Monday, June 6	Zeus North
14:00-16:00	

MS 906 - 1: MATHEMATICAL ADVANCES IN ISOGEOMETRIC ANALYSIS

MS Organizers: Annalisa Buffa, John A. Evans, Thomas J.R. Hughes, Giancarlo Sangalli

Chair: Giancarlo Sangalli

- 8500** KEYNOTE: ROBUST PRECONDITIONERS FOR OPTIMALITY SYSTEMS USING ISOGEOMETRIC ANALYSIS
Jarle Sogn, Walter Zulehner
- 5647** MULTIGRID METHODS FOR ISOGEOMETRIC ANALYSIS
Clemens Hofreither, Stefan Takacs, Walter Zulehner
- 10319** THE GLT CLASS AS A GENERALIZED FOURIER ANALYSIS AND APPLICATIONS
Stefano Serra Capizzano
- 9226** PRECONDITIONERS FOR ISOGEOMETRIC ANALYSIS BASED ON SOLVERS FOR SYLVESTER EQUATION
Giancarlo Sangalli, Mattia Tani
- 9991** SCALABLE ISOGEOMETRIC DOMAIN DECOMPOSITION PRECONDITIONERS FOR MIXED ELASTICITY AND STOKES SYSTEMS
Lourenco Beirao da Veiga, Luca F. Pavarino, Simone Scacchi, Stefano Zampini

Monday, June 6	Zeus West
14:00-16:00	

MS 609 - 1: ADVANCED COMPUTATIONAL MODELING OF BATTERIES AND FUEL CELLS

MS Organizers: Edwin Knobbe, Wolfgang A. Wall

Chair: Edwin Knobbe

- 9290** KEYNOTE: MODELING DIFFUSION INDUCED FRACTURE IN SILICON ELECTRODES THROUGH A PHASE FIELD APPROACH
Christian Linder, Xiaoxuan Zhang
- 9915** PHASE-FIELD STUDY OF ELECTROCHEMICAL REACTIONS AT EXTERIOR SURFACE, CRACK SURFACES AND PHASE INTERFACES IN LI-ION BATTERY ELECTRODE PARTICLES
Bai-Xiang Xu, Ying Zhao, Peter Stein
- 8172** STOCHASTIC 3D MODELING OF AMORPHOUS MICROSTRUCTURES - A POWERFUL TOOL FOR VIRTUAL MATERIALS TESTING
Matthias Neumann, Volker Schmidt
- 7302** CONSISTENT MODELING AND NUMERICAL SIMULATION OF SPACE-CHARGE LAYER FORMATION IN ALL-SOLID-STATE THIN-FILM CELLS
Katharina Becker-Steinberger, Stefanie Braun, Simon Schardt, Arnulf Latz
- 6857** ELECTROCHEMICAL POTENTIAL ANALYSIS OF SOLID OXIDE FUEL CELL BASED ON REACTION-DIFFUSION EQUATIONS CONSIDERING PHASE TRANSFORMATION OF ZIRCONIUM OXIDE
Mayu Muramatsu, Haruo Kishimoto, Katsuhiko Yamaji, Keiji Yashiro, Tatsuya Kawada, Kenjiro Terada, Harumi Yokokawa

Monday, June 6	Minos East
14:00-16:00	

MS 501 - 1: ALGORITHMIC ASPECTS OF HIGH-PERFORMANCE COMPUTING FOR MECHANICS AND PHYSICS

MS Organizers: Santiago Badia, Victor Calo, Javier Principe

Chair: Santiago Badia

- 10863** KEYNOTE: COMPUTATIONAL SCREENING TOOLS FOR MODELING ENERGY PROBLEMS IN POROUS MEDIA
Mary Wheeler
- 6715** COMPUTATIONAL COMPLEXITY OF ISOGEOMETRIC FEM WITH T-SPLINES AND B-SPLINES OVER 2D H-REFINED GRIDS
Pawel Lipski, Bartosz Janota, Maciej Paszynski, Victor Calo
- 8168** EFFICIENT SOLUTION OF LARGE SCALE MULTI-STAGE OPTIMAL POWER FLOW PROBLEMS USING INTERIOR POINT METHODS
Drosos Kourounis, Alexander Fuchs, Olaf Schenk
- 8294** EFFICIENT SOLUTION METHODS FOR ELECTROMAGNETICS AND MULTIFLUID PLASMA MODELS
Edward Phillips, John Shadid, Eric Cyr
- 5028** ON THE USE OF LOW RANK APPROXIMATIONS FOR THE CONSTRUCTION OF EFFICIENT PRECONDITIONERS
Paolo Gatto, Jan Hesthaven

<p>Monday, June 6 14:00-16:00</p> <p>MS 1101 - 1: REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES</p> <p><i>MS Organizers:</i> Francisco Chinesta, Elias Cueto, Antonio Huerta, Pierre Ladeveze, Gianluigi Rozza <i>Chair:</i> Pierre Ladeveze</p> <p>9495 KEYNOTE: AN EXTENDED PGD-REDUCED MODEL APPROACH IN SOLID MECHANICS FOR LARGE NUMBER OF PARAMETERS <i>Pierre Ladeveze, David Neron, Charles Paillet</i></p> <p>6258 REDUCED BASIS METHOD FOR FAST PARETO SOLUTIONS IN MULTIOBJECTIVE OPTIMIZATION <i>Laura Lapichino, Stefan Volkwein, Stefan Trenz</i></p> <p>5895 WAVELETS WITHIN THE REDUCED BASIS METHODS? <i>Karsten Urban</i></p> <p>8234 THE PROPER GENERALIZED DECOMPOSITION APPLIED TO THE NUMERICAL SIMULATION OF ELASTOPLASTIC PROBLEMS <i>Jean-Christophe Roux, Sylvain Zuchiatti, Eric Feulvarch, Samuel Tissot, Gilles Perrin, Jean-Michel Bergheau</i></p> <p>8193 EIGENVALUE REDUCED BASIS APPROXIMATION FOR COMPLEX SOLID STRUCTURES <i>Thomas Horger, Barbara Wohlmuth</i></p>	<p>Minos North</p>	<p>Monday, June 6 14:00-16:00</p> <p>MS 304: COMPUTATIONAL MODELLING OF ADDITIVE PRODUCTION PROCESSES</p> <p><i>MS Organizers:</i> Dirk Hartmann, Stefan Kollmannsberger, Ernst Rank, Utz Wever <i>Chair:</i> Dirk Hartmann</p> <p>9881 INTERACTIVE TOPOLOGY OPTIMIZATION <i>Hans-Joachim Bungartz, Stefan Gavranovic, Dirk Hartmann, Utz Wever</i></p> <p>8226 A HIGH-ORDER ACCURATE COMPUTATIONAL FRAMEWORK FOR THE SIMULATION OF SLM PROCESSES <i>Stefan Kollmannsberger, Ali Özcan, Massimo Carraturo, Nils Zander, Ernst Rank</i></p> <p>12047 NUMERICAL MODEL FOR THERMAL ANALYSIS OF LASER BASED ADDITIVE MANUFACTURING PROCESSES <i>Arnaud Francois, Eric Wyart</i></p> <p>4477 SIMULATION OF TEMPERATURE DISTRIBUTION AND MECHANICAL MATERIAL BEHAVIOUR IN SELECTIVE BEAM MELTING PROCESSES <i>Daniel Riedlbauer, Paul Steinmann, Julia Mergheim</i></p> <p>8641 A MULTI-SCALE APPROACH FOR EFFICIENT SIMULATION OF SELECTIVE LASER MELTING <i>Luke Parry, Ian Ashcroft, Ricky Wildman</i></p> <p>10184 VALIDATION OF MODELLING ASSUMPTIONS FOR THE BUILDUP SIMULATION OF LASER BEAM MELTING ON THE BASIS OF THE RESIDUAL STRESS DISTRIBUTION <i>Fabian Bayerlein, Christian Zeller, Martin Wunderer, Johannes Weirather, Michael F. Zäh, Markus Schmid, Georg Schlick, Roland Hessert, Michael Hofmann, Thomas Uihlein</i></p>	<p>Danae</p>
<p>Monday, June 6 14:00-16:00</p> <p>MS 503 - 1: HPC-BASED SIMULATIONS FOR THE ENGINEERING REALM AND INDUSTRIAL APPLICATIONS</p> <p><i>MS Organizers:</i> Makoto Tsubokura, Mariano Vázquez, Takayuki Aoki <i>Chair:</i> Makoto Tsubokura</p> <p>6885 LARGE-EDDY SIMULATION OF COAL GASIFICATION ON A TWO-STAGE ENTRAINED FLOW COAL GASIFIER <i>Hiroaki Watanabe, Kenji Tanno, Ryoichi Kurose</i></p> <p>10082 TOWARDS HIGHLY SCALABLE UNCERTAINTY QUANTIFICATION FOR CHALLENGING BIOMEDICAL APPLICATIONS ON GPU CLUSTERS <i>Peter Zaspel</i></p> <p>8231 SIMULATION OF COMPRESSIBLE FLOW OVER RECTANGULAR CAVITIES USING THE FLUX RECONSTRUCTION APPROACH <i>Arvind Iyer, Peter Vincent</i></p> <p>5067 EFFICIENT PARALLEL GEOMETRY DISTRIBUTION FOR THE SIMULATION OF COMPLEX FLOWS <i>Andreas Lintemann</i></p> <p>8019 A LARGE-SCALE FREE-SURFACE FLOW SIMULATION USING LATTICE BOLTZMANN METHOD ON MULTI-GPU CLUSTERS. <i>Naoyuki Onodera, Kunihide Ohashi</i></p> <p>9402 CONTROL OF AERODYNAMIC NOISE BY USING IMPINGING JETS PLACED AT UPSTREAM OF THE CAVITY <i>Ryo Adachi, Taiki Minato, Hiroshi Yokoyama, Akiyoshi Iida</i></p>	<p>Minos South</p>	<p>Monday, June 6 14:00-16:00</p> <p>MS 914 - 1: INNOVATIVE NON-BOUNDARY-FITTED DISCRETIZATION METHODS</p> <p><i>MS Organizers:</i> Fehmi Cirak, John E. Dolbow, Isaac Harari, Ming-Chen Hsu, Thomas J.R. Hughes, Dominik Schillinger <i>Chair:</i> Dominik Schillinger</p> <p>5105 KEYNOTE: EMBEDDED BOUNDARY METHODS FOR PLATE BENDING PROBLEMS <i>Isaac Harari</i></p> <p>7504 EMBEDDED SOLIDS OF ANY DIMENSION IN THE X-FEM DEFINED ON HIGHER-ORDER APPROXIMATIONS <i>Frédéric Duboeuf, Eric Béchet</i></p> <p>7203 TOWARDS MASSIVELY PARALLEL HIGHER-ORDER IMMersed DOMAIN FINITE ELEMENT ANALYSIS <i>Vasco Varduhn, Dominik Schillinger</i></p> <p>7127 ON IMMersed AND PHASE-FIELD TECHNIQUES <i>Christian Hesch</i></p> <p>7709 A POSITION- AND ORIENTATION-INDEPENDENT EMBEDDED BOUNDARY METHOD WITH A WALL FUNCTION FOR COMPRESSIBLE VISCOUS FLOWS <i>Dante De Santis, Charbel Farhat</i></p>	<p>Europa</p>
<p>Monday, June 6 14:00-16:00</p>			

DAY 1 – MONDAY, JUNE 6

<p>Monday, June 6 14:00-16:00</p> <p>MS 1005: MONITORING AND CONTROL OF STRUCTURES MS Organizers: Resat Oyguc Chair: Marcello Vanali</p> <p>9244 DESIGN AND INSTALLATION OF A PERMANENT MONITORING SYSTEM FOR PALAZZO LOMBARDIA IN MILANO, ITALY <i>Marta Berardengo, Alfredo Cigada, Stefano Manzoni, Marcello Vanali</i></p> <p>8822 UNIFIED PROGNOSTICS AND REAL-TIME CONTROL IN STRUCTURAL DYNAMICS UNDER UNCERTAINTY <i>Abhishek Kundu, Pierre Kerfriden</i></p> <p>11882 CHARACTERISING THE DYNAMIC RESPONSE OF A DEFORMED MASONRY ARCH RAIL BRIDGE USING MONITORING AND REMOTE SENSING <i>Sinan Acikgoz, Hesham Aldaikh, Matthew DeJong, Cedric Kechavarzi, Kenichi Soga</i></p> <p>4439 SHAPE IDENTIFICATION ANALYSIS OF CAVITY IN RESIN STRUCTURE BASED ON THERMAL NONDESTRUCTIVE TESTING METHOD <i>Kotaro Maruoka, Takahiko Kurahashi, Tetsuro Iyama</i></p> <p>5880 SELECTED PROBLEMS OF DAMAGE DETECTION IN INTERNALLY SUPPORTED PLATES USING DISCRETE WAVELET TRANSFORM <i>Michał Gumińskiak, Anna Knitter-Piatkowska</i></p>	<p>Leda</p>	<p>Monday, June 6 14:00-16:00</p> <p>MS 903 - 1: ADVANCES IN FICTITIOUS DOMAIN METHODS FOR SOLID MECHANICS MS Organizers: Alexander Düster, Ernst Rank, Stefan Kollmannsberger, Andreas Schröder</p> <p>8116 KEYNOTE: THE FINITE CELL METHOD: SOME RECENT ADVANCES AND APPLICATIONS TO SOLID MECHANICS <i>Alexander Düster, Meysam Joulaian, Stephan Heinze, Simeon Hubrich, Aliakbar Taghipour, Jamshid Parvizian</i></p> <p>9068 SIMULATION OF LAMB WAVE PROPAGATION USING THE B-SPLINE VERSION OF THE FINITE CELL METHOD <i>Yaser Mirbagheri, Jamshid Parvizian, Hassan Nahvi, Alexander Düster</i></p> <p>7904 AN EXTENSION OF THE FINITE CELL METHOD USING BOOLEAN OPERATIONS <i>Alireza Abedian, Alexander Düster</i></p> <p>7595 SMART OCTREES: NUMERICAL QUADRATURE FOR IMMERSED BOUNDARY METHODS IN THREE DIMENSIONS <i>László Kudela, Nils Zander, Stefan Kollmannsberger, Ernst Rank</i></p> <p>4572 HIGH ORDER UNFITTED FEM ON LEVEL SET DOMAINS USING ISOPARAMETRIC MAPPINGS <i>Christoph Lehrenfeld</i></p>	<p>Artemis</p>
<p>Monday, June 6 14:00-16:00</p> <p>MS 302 - 1: MESH GENERATION AND ADAPTION MS Organizers: Josep Sarrate, Xevi Roca, Rafael Montenegro, Eloi Ruiz Chair: Josep Sarrate</p> <p>11948 A MESH GENERATION METHOD FOR HISTORICAL MONUMENTAL BUILDINGS: AN INNOVATIVE APPROACH <i>Giovanni Castellazzi, Antonio Maria D'Altri, Stefano de Miranda, Francesco Ubertini, Gabriele Bitelli, Alessandro Lambertini, Ilenia Selvaggi, Antonio Michele Tralli</i></p> <p>7554 A SEMI-UNSTRUCTURED TURBOMACHINERY MESHING LIBRARY WITH FOCUS ON MODELING OF SPECIFIC GEOMETRICAL FEATURES <i>Marco Stellinger, Thomas Giersch, Felix Figaschewsky, Arnold Kühhorn</i></p> <p>7705 MESH GENERATION FOR WIND FARM DESIGN <i>Abel Gargallo-Péiró, Matias Avila, Herbert Owen, Luis Prieto, Arnau Folch</i></p> <p>7417 A SIMPLE CHECK FOR DETERMINING THE MINIMUM NUMBER OF SINGULARITIES REQUIRED IN A QUAD MESH ON A SURFACE <i>Harold J Fogg, Liang Sun, Cecil G Armstrong, Christopher M Tierney, Trevor T Robinson</i></p> <p>7536 INSERTION OF ANTHROPOGENIC CONSTRUCTIONS IN A TETRAHEDRAL MESH OF THE TERRAIN USING THE MECCANO METHOD <i>Guillermo Valentín Socorro-Marrero, Albert Oliver, Eduardo Rodríguez, José M. Escobar, Gustavo Montero, Rafael Montenegro</i></p>	<p>Athena</p>	<p>Monday, June 6 14:00-16:00</p> <p>MS 921 - 1: RECENT ADVANCES IN BOUNDARY ELEMENT METHODS MS Organizers: Gernot Beer, Luiz Wrobel, Martin Schan</p> <p>4408 KEYNOTE: ADVANCES IN THE BOUNDARY ELEMENT METHOD IN GEOMECHANICS <i>Gernot Beer</i></p> <p>6120 MODELLING THE PROCESS OF SEQUENTIAL EXCAVATION WITH THE BOUNDARY ELEMENT METHOD <i>Christian Duenser, Gernot Beer</i></p> <p>7809 QUADTREE SCHEME FOR THREE DIMENSIONAL BOUNDARY ELEMENT MESH GENERATION <i>John Watson</i></p> <p>9199 3D SOUND PROPAGATION AROUND BARRIERS WITH SPECIFIED ABSORPTION IN THE VICINITY OF REFLECTING PLANES <i>Julieta Antonio, Antonio Tadeu</i></p> <p>8000 A SCALED BOUNDARY FINITE ELEMENT METHOD FOR VISCOELASTIC PROBLEMS WITH CYCLICALLY SYMMETRIC STRUCTURES <i>Yiqian He, Chongshuai Wang, Haitian Yang</i></p>	<p>Aphrodite</p>
<p>Monday, June 6 14:00-16:00</p> <p>MS 302 - 1: MESH GENERATION AND ADAPTION MS Organizers: Josep Sarrate, Xevi Roca, Rafael Montenegro, Eloi Ruiz Chair: Josep Sarrate</p> <p>11948 A MESH GENERATION METHOD FOR HISTORICAL MONUMENTAL BUILDINGS: AN INNOVATIVE APPROACH <i>Giovanni Castellazzi, Antonio Maria D'Altri, Stefano de Miranda, Francesco Ubertini, Gabriele Bitelli, Alessandro Lambertini, Ilenia Selvaggi, Antonio Michele Tralli</i></p> <p>7554 A SEMI-UNSTRUCTURED TURBOMACHINERY MESHING LIBRARY WITH FOCUS ON MODELING OF SPECIFIC GEOMETRICAL FEATURES <i>Marco Stellinger, Thomas Giersch, Felix Figaschewsky, Arnold Kühhorn</i></p> <p>7705 MESH GENERATION FOR WIND FARM DESIGN <i>Abel Gargallo-Péiró, Matias Avila, Herbert Owen, Luis Prieto, Arnau Folch</i></p> <p>7417 A SIMPLE CHECK FOR DETERMINING THE MINIMUM NUMBER OF SINGULARITIES REQUIRED IN A QUAD MESH ON A SURFACE <i>Harold J Fogg, Liang Sun, Cecil G Armstrong, Christopher M Tierney, Trevor T Robinson</i></p> <p>7536 INSERTION OF ANTHROPOGENIC CONSTRUCTIONS IN A TETRAHEDRAL MESH OF THE TERRAIN USING THE MECCANO METHOD <i>Guillermo Valentín Socorro-Marrero, Albert Oliver, Eduardo Rodríguez, José M. Escobar, Gustavo Montero, Rafael Montenegro</i></p>	<p>Athena</p>	<p>Monday, June 6 14:00-16:00</p> <p>MS 921 - 1: RECENT ADVANCES IN BOUNDARY ELEMENT METHODS MS Organizers: Gernot Beer, Luiz Wrobel, Martin Schan</p> <p>4408 KEYNOTE: ADVANCES IN THE BOUNDARY ELEMENT METHOD IN GEOMECHANICS <i>Gernot Beer</i></p> <p>6120 MODELLING THE PROCESS OF SEQUENTIAL EXCAVATION WITH THE BOUNDARY ELEMENT METHOD <i>Christian Duenser, Gernot Beer</i></p> <p>7809 QUADTREE SCHEME FOR THREE DIMENSIONAL BOUNDARY ELEMENT MESH GENERATION <i>John Watson</i></p> <p>9199 3D SOUND PROPAGATION AROUND BARRIERS WITH SPECIFIED ABSORPTION IN THE VICINITY OF REFLECTING PLANES <i>Julieta Antonio, Antonio Tadeu</i></p> <p>8000 A SCALED BOUNDARY FINITE ELEMENT METHOD FOR VISCOELASTIC PROBLEMS WITH CYCLICALLY SYMMETRIC STRUCTURES <i>Yiqian He, Chongshuai Wang, Haitian Yang</i></p>	<p>Aphrodite</p>

<p>Monday, June 6 14:00-16:00</p> <p>MS 1306 -1: ERCOFTAC SIG-45: UNCERTAINTY QUANTIFICATION IN CFD AND FLUID STRUCTURE INTERACTION</p> <p><i>MS Organizers:</i> Didier Lucor, Sunetra Sarkar <i>Chair:</i> Sunetra Sarkar</p> <p>9850 A STOCHASTIC RECONSTRUCTION TECHNIQUE FOR THE OUTPUT VELOCITY FIELD OF A 'DEBYE TYPE' POROUS MEDIA <i>Santhosh Jude Illango, A Sameen, Sunetra Sarkar</i></p> <p>7741 A MULTI-FIDELITY ADAPTIVE SAMPLING METHOD FOR METAMODEL-BASED UNCERTAINTY QUANTIFICATION OF COMPUTER SIMULATIONS <i>Riccardo Pellegrini, Cecilia Leotardi, Umberto Iemma, Emilio Campana, Matteo Diez</i></p> <p>9160 A LEAST-SQUARES, ADAPTIVE UNCERTAINTY PROPAGATION APPROACH FOR A PLASMA-COUPLED COMBUSTION SYSTEM <i>Kunkun Tang, Luca Massa, Jonathan Wang, Jonathan Freund</i></p> <p>8576 UNCERTAINTY QUANTIFICATION IN PATIENT-SPECIFIC FINITE ELEMENT SIMULATION OF BLOOD FLOW IN THE LEFT VENTRICLE OF THE HUMAN HEART <i>Jeannette Spühler, David Larsson, Massimiliano Colarieti-Tosti, Matilda Larsson, Johan Hoffman</i></p> <p>7769 AN EFFICIENT APPROACH FOR MULTI-OBJECTIVE ROBUST DESIGN <i>Lisa Kusch, Nicolas R. Gauger</i></p>	<p>Antigoni</p>	<p>MS 1104 - 1: REDUCED-ORDER MODELS FOR PDE-CONSTRAINED OPTIMIZATION AND INVERSE PROBLEMS</p> <p><i>MS Organizers:</i> Alfio Quarteroni, Andrea Manzoni <i>Chair:</i> Andrea Manzoni</p> <p>5892 REDUCED BASIS METHODS FOR CATALYST CONVERTERS <i>Karsten Urban</i></p> <p>10587 MONGE-KANTOROVICH INTERPOLATION FOR PDE CONSTRAINED OPTIMIZATION <i>Michel Bergmann, Angelo Iollo, Haysam Telib</i></p> <p>8839 MODEL ORDER REDUCTION STRATEGIES FOR THE SIMULATION AND OPTIMIZATION OF PHYSIOLOGICAL FLOWS <i>Federico Negri, Andrea Manzoni, Alfio Quarteroni</i></p> <p>8242 A REDUCED-ORDER STRATEGY FOR EFFICIENT STATE/PARAMETER IDENTIFICATION IN CARDIAC ELECTROPHYSIOLOGY <i>Stefano Pagani, Andrea Manzoni, Alfio Quarteroni</i></p>	<p>Apollo West</p>	
<p>Monday, June 6 14:00-16:00</p>			Room 1	
<p>MS 1307 - 1: NON-INTRUSIVE SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION IN HIGH DIMENSIONS</p> <p><i>MS Organizers:</i> Bruno Sudret, Eleni Chatzi, Jean-Marc Bourinet, Nicolas Gayton <i>Chair:</i> Vasilis Dertimanis</p> <p>5428 EFFICIENT GLOBAL SENSITIVITY ANALYSIS OF HIGH-DIMENSIONAL MODELS USING LOW-RANK TENSOR APPROXIMATIONS <i>Katerina Konakli, Bruno Sudret</i></p> <p>4576 ASSESSMENT OF THE QUALITY OF SENSITIVITY INDICES BASED ON METAMODELS <i>Maria Steiner, Reza Khosravian, Tom Lahmer</i></p> <p>6802 POLYNOMIAL CHAOS EXPANSIONS FOR MODELING THE FREQUENCY RESPONSE FUNCTIONS OF STOCHASTIC DYNAMICAL SYSTEM <i>Vahid Yaghoubi, Stefano Marelli, Bruno Sudret, Thomas Abrahamsson</i></p> <p>7412 A STATISTICAL APPROACH FOR BUILDING SPARSE POLYNOMIAL CHAOS EXPANSIONS <i>Simon Abraham, Ghader Ghorbaniasl, Chris Lacor</i></p> <p>5821 OPTIMIZATION OF A PHOTOACOUSTIC GAS SENSOR USING MULTIFIDELITY RBF METAMODELING <i>Cedric Durantin, Justin Rouxel, Jean-Antoine Desideri, Alain Gliere</i></p>				
<p>Monday, June 6 14:00-16:00</p> <p>MS 303 - 1 : CURVED MESH GENERATION FOR HIGH-ORDER METHODS</p> <p><i>MS Organizers:</i> Xevi Roca, Josep Sarrate <i>Chair:</i> Xevi Roca</p> <p>10925 A CONSISTENTLY LINEARISED SOLID MECHANICS BASED MESH DEFORMATION TECHNIQUE FOR HIGH ORDER CURVED ELEMENTS <i>Roman Poya, Ruben Sevilla, Antonio Gil</i></p> <p>6539 EFFICIENT COMPUTATION OF THE EXTREMA OF ALGEBRAIC QUALITY MEASURES FOR CURVILINEAR FINITE ELEMENTS <i>Amaury Johnen, Christophe Geuzaine, Jean-François Remacle</i></p> <p>8410 AUTOMATIC GENERATION OF 3D UNSTRUCTURED HIGH-ORDER CURVILINEAR MESHE <i>Michael Turner, David Moxey, Spencer J.Sherwin, Joaquim Peiro</i></p> <p>7163 CHECKING AND IMPROVING THE GEOMETRIC ACCURACY OF NON-INTERPOLATING CURVED HIGH-ORDER MESHES <i>Eloi Ruiz-Gironés, Jose Sarrate, Xevi Roca</i></p> <p>10030 MESH GENERATION FOR THE 2D NURBS-ENHANCED FINITE ELEMENT METHOD <i>Ruben Sevilla, Luke Rees, Oubay Hassan</i></p>	<p>Apollo East</p>			

DAY 1 – MONDAY, JUNE 6

<p>Monday, June 6 14:00-16:00</p> <p>CS 420 - 1: MULTI-PHASE AND CHEMICALLY REACTING FLOWS Chair: <i>Roozbeh Mousavi</i></p> <p>9241 LEVEL SET METHOD FOR SIMULATING THE INTERFACE KINEMATICS: APPLICATION OF A DISCONTINUOUS GALERKIN METHOD <i>Roozbeh Mousavi, Florian Kummer, Martin Oberlack, Peter F. Pelz</i></p> <p>5482 MODELLING OF COMBUSTION AND POLLUTANT FORMATION IN A LARGE, TWO-STROKE MARINE DIESEL ENGINE USING INTEGRATED CFD-SKELETAL CHEMICAL MECHANISM <i>Kar Mun Pang, Nikolas Karvounis, Jesper Schramm, Jens Walther</i></p> <p>9960 MOMENT-OF-FLUID ANALYTIC RECONSTRUCTION ON CARTESIAN GRIDS <i>Antoine Lemoine</i></p> <p>11006 NUMERICAL SIMULATION OF HYDROGEN JET INJECTION AND IGNITION IN SUPersonic FLOW <i>Yulia Zakharova, Natalya Fedorova, Svetlana Valger, Marat Goldfeld, Olga Vankova</i></p> <p>8733 NUMERICAL INVESTIGATION OF METASTABLE CONDENSING FLOWS WITH AN IMPLICIT UPWIND METHOD <i>Lucia Azzini, Teus Van der Stelt, Matteo Pini</i></p> <p>6184 CFD-XDEM FOR PREDICTING MULTIPHASE FLOW BEHAVIOR THROUGH POROUS MEDIA <i>Maryam Baniasadi, Bernhard Peters</i></p>	Room 2	<p>Monday, June 6 14:00-16:20</p> <p>CS 210: NUMERICAL SIMULATION OF COMPOSITE MATERIALS Chair: <i>Sami Holopainen</i></p> <p>11047 EVOLUTION EQUATIONS BASED APPROACH FOR MODELING FATIGUE IN AMORPHOUS GLASSY POLYMERS. ON THE INVESTIGATION OF DAMAGE MECHANISMS IN POLYCARBONATE. <i>Sami Holopainen</i></p> <p>7468 A LEVEL SET MODEL FOR THE NUMERICAL MODELING OF COMPOSITES DELAMINATION: APPLICATION TO MULTI-FRONT PROBLEMS <i>Elia Picault, Patrick Rozycski</i></p> <p>7796 A FAILURE CRITERIA FOR UNIDIRECTIONAL FIBER REINFORCED COMPOSITES BASED ON MICROMECHANICS BY ASYMPTOTIC HOMOGENIZATION <i>Rafael Quelho de Macedo, José Miranda Guedes, Rafael Thiago Luiz Ferreira, Maurício Vicente Donadon</i></p> <p>7509 INVESTIGATIONS ON AN INNOVATIVE METAL-THERMOPLASTIC COMPOSITE ASSEMBLY <i>Simon Paroissien, Patrick Rozycski, Thierry Renault</i></p> <p>7489 MICROSTRUCTURAL ANALYSIS USING X-RAY COMPUTED TOMOGRAPHY (CT) <i>Malika Kersani, Stepan Lomov, Aartwillem Van Vuure, Ahcène Bouabdallah, Ignass Verpoest</i></p> <p>11190 SMOOTH CRACK PROPAGATION FOR STATIC AND DYNAMIC CRACK PROPAGATION <i>Chris Pearce, Lukasz Kaczmarczyk</i></p> <p>10881 MULTIPLE FRACTURE GROWTH USING STRESS INTENSITY FACTOR CRITERIA EVALUATED ON UNSTRUCTURED TETRAHEDRAL MESHES IN THREE DIMENSIONS <i>Adriana Paluszny, Robert W Zimmerman</i></p>	Room 4
<p>Monday, June 6 14:00-16:00</p> <p>MS 308: ADVANCES IN RAPID CAX MS Organizers: Michael Breitenberger Chair: Michael Breitenberger</p> <p>10696 ADVANCES IN EMBEDDED SOLVERS - TOWARDS THE INTEGRATION WITH CADS <i>Riccardo Rossi, Abel Coll, Pooyan Dadvand, Roland Wuechner, Andreas Apostolatos, Dimitrios Iliopoulos</i></p> <p>10419 COUPLING NON-CONFORMING NURBS PATCHES IN ISOGEOMETRIC ANALYSIS USING VIRTUAL REFINEMENT AND A MASTER-SLAVE FORMULATION <i>Laurens Coox, Francesco Greco, Onur Atak, Dirk Vandepitte, Wim Desmet</i></p> <p>10090 ROBUST MESHING OF LARGE SCALE NON-WATERTIGHT GEOMETRIES <i>Abel Coll, Pooyan Dadvand</i></p> <p>10616 NON-MATCHING GRID TREATMENT FOR CAD-BASED SHELL AND MEMBRANE ANALYSIS IN COMPUTATIONAL FSI <i>Roland Wüchner, Andreas Apostolatos, Michael Breitenberger, Riccardo Rossi, Kai-Uwe Bletzinger</i></p> <p>7581 MAIN CHALLENGES FOR PERFORMING STRUCTURAL SHELL ANALYSIS DIRECTLY ON CAD MODELS <i>Michael Breitenberger, Roland Wüchner, Kai-Uwe Bletzinger</i></p>	Room 3	<p>Monday, June 6 14:00-16:00</p> <p>CS 840 - 1: MULTI-SCALE COMPUTATIONAL METHODS FOR SOLIDS AND FLUIDS Chair: <i>Anna Kucaba-Pietal</i></p> <p>12141 SCALE EFFECT IN MICROFLOWS MODELLING WITH MICROPOLAR FLUID THEORY <i>Anna Kucaba-Pietal</i></p> <p>7984 SPATIAL CLUSTERING STRATEGIES FOR HIERARCHICAL MULTI-SCALE MODELLING OF METAL PLASTICITY <i>Md Khairullah, Jerzy Gawad, Dirk Roose, Albert van Bael</i></p> <p>5898 ON THE INFLUENCE OF DIFFERENT MAPPING TECHNIQUES FOR A MULTISCALE APPROACH TO TURBULENT THREE-PHASE FLOWS <i>Gabriele Pozzetti, Bernhard Peters</i></p> <p>10906 BLACK-BOX SOLVER FOR QUASI ONE-DIMENSIONAL MULTISCALE MODELLING USING THE QTT FORMAT <i>Ivan Oseledets, Maxim Rakhuba, Andrei Chertkov</i></p> <p>11785 MULTISCALE SIMULATION OF ACOUSTIC WAVES IN POROUS MEDIA WITH LOW AND HIGH PERMEABILITY CONTRASTS <i>Vu-Hieu Nguyen, Eduard Rohan, Salah Naili</i></p> <p>6694 MODELLING THE THERMOPLASTIC MATERIAL BEHAVIOUR OF DUAL-PHASE STEELS ON A MICROSCOPIC AND MACROSCOPIC LENGTH SCALE <i>Sebastian Zeller, Stefan Loehnert, Peter Wriggers</i></p>	Room 5

DAY 1 – MONDAY, JUNE 6

Monday, June 6 14:00-16:00		Room 7	14:00-16:00
CS 110 - 1: NUMERICAL MODELS IN BIOMECHANICS			CS 750 - 1: COMPUTATIONAL MODELING OF COMPOSITES
<i>Chair:</i> Amar Oukara			<i>Chair:</i> Mikhail Itskov
10832 AN INTEGRATED NUMERICAL SIMULATION OF A WING-BODY COMBINATION FOR \TEXIT{DROSOPHILA} FLIGHT <i>Mehmmet Sahin, Ezgi Dilek, Belkis Erzincanli</i>			6784 IMPROVING THE ACCURACY OF NUMERICAL INTEGRATION OVER THE UNIT SPHERE FOR LARGE STRAIN MICROSPHERE (MICROPLANE) MODELS <i>Mikhail Itskov</i>
9621 TIME INTEGRATION SCHEMES COMPARISON FOR PARTICLES TRANSPORT <i>Edgar Olivares Mañas</i>			14028 STRUCTURAL ANALYSIS OF ADHESIVE BONDING FOR THICK-WALLED TUBULAR COMPOSITE PROFILES <i>Geminiano Mancusi, Agostina Orefice, Luciano Feo, Fernando Fraternali</i>
7136 ON THE INJURY RISK ASSESSMENT OF NON-LETHAL PROJECTILE HEAD IMPACTS <i>Amar Oukara, Nestor Nsiampa, Cyril Robbe, Alexandre Papy</i>			9771 A 3D FINITE ELEMENTS ANALYSIS OF THERMOPLASTIC LAMINATES RVE <i>Romain Hamonou, Laurent Gornet, Frédéric Jacquemin, Stéphane Auger</i>
11729 FINITE-ELEMENT MODEL OF INTRAOCCULAR PRESSURE MEASUREMENT BY MAKLAKOV APPLANATION TONOMETER <i>Dmitry V. Franus</i>			9780 TIMOSHENKO BEAM ELEMENT WITH ANISOTROPIC CROSS-SECTIONAL PROPERTIES <i>Alexander R. Stäblein, Morten H. Hansen</i>
6047 PRELIMINARY STUDY TO INVESTIGATE THE EFFECT OF PISTON-LIKE AND ROCKING MOTIONS OF THE STAPES FOOTPLATE ON THE BASILAR MEMBRANE VIBRATION <i>Philipp Wahl, Sebastian Ihrle, Pascal Ziegler, Peter Eberhard</i>			11293 CONSTITUTIVE MODELLING FOR THE CURING PROCESS IN PARTICLE-FILLED ELECTRO-ACTIVE POLYMERS <i>Mokarram Hossain</i>
7355 EXPERIMENTAL STUDY ON THE FUZZY-PID HYBRID CONTROL ALGORITHM FOR UNLOADING SYSTEM IN MECHATRONIC DEVICE FOR GAIT RE-EDUCATION <i>Slawomir Duda, Grzegorz Gembalcyk</i>			
Monday, June 6 14:00-16:00		Room 8	Room 10
MS 1218: STABILITY AND CONTROL OF FLEXIBLE STRUCTURES			MS 505 - 1: INTERACTIVE SIMULATIONS IN COMPUTATIONAL ENGINEERING
<i>MS Organizers:</i> Ilaria Venanzi, Marco Lepidi			<i>MS Organizers:</i> Adrian Harwood, Petra Wenisch
<i>Chair:</i> Ilaria Venanzi, Marco Lepidi			<i>Chair:</i> Adrian Harwood
7079 EXPLOITING MULTIPLE REFERENCE MODELS FOR ADAPTIVE CONTROL OF FLEXIBLE STRUCTURES <i>Ilaria Venanzi, Laura Ierimonti</i>			8200 INTERACTIVE SIMULATION OF INDOOR FLUID USING THE LATTICE BOLTZMANN METHOD <i>Petra Wenisch, Dirk Fleckenstein</i>
7460 PASSIVE CONTROL OF WAVE PROPAGATION IN PERIODIC ANTI-TETRACHIRAL META-MATERIALS <i>Marco Lepidi, Andrea Bacigalupo</i>			12026 INTERACTIVE SIMULATION OF CFD PROBLEMS ON BOARDS <i>Florian De Vuyst</i>
8686 FLEXIBLE COMPLEX SYSTEM OF A DOUBLE-STRING UNDER EXTREME MOVING LOADS <i>Jarosław Rusin</i>			11789 GPU COMPUTING – A CHANCE FOR COMPUTATIONAL STEERING IN THE CFD DOMAIN <i>Jan Linxweiler, Manfred Krafczyk</i>
11538 COMPUTATIONAL EFFECTIVENESS OF LMI DESIGN STRATEGIES FOR VIBRATION CONTROL OF LARGE STRUCTURES <i>Francisco Palacios-Quiñonero, Josep Rubió-Massegú, Josep M. Rossell, Hamid Reza Karimi</i>			11193 GPUS AND LBM: A PERFECT MATCH FOR REAL-TIME SIMULATIONS AND INTERACTIVE MONITORING OF THREE-DIMENSIONAL CFD <i>Christian Janßen, Thomas Rung</i>
11938 A SMART BASE RESTRAINT FOR WIND TURBINES TO MITIGATE UNDESIRED EFFECTS DUE TO STRUCTURAL VIBRATIONS <i>Nicola Caterino, Christos T. Georgakis, Mariacristina Spizzuoco, Antonio Occhiuzzi</i>			10295 INTERACTIVE FLOW SIMULATIONS BASED ON A MASSIVE PARALLEL I/O KERNEL USING HDF5 <i>Christoph Ertl, Ralf-Peter Mundani, Ernst Rank</i>
8996 ON THE MODELING OF SELF-DAMPING IN STRANDED CABLES <i>Francesco Foti, Luca Martinelli, Federico Perotti</i>			

Monday, June 6	Room 9
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DAY 1 – MONDAY, JUNE 6

Monday, June 6	Room 11
14:00-16:00	

MS 916 - 1: DIRECT METHODS FOR LIMIT STATES OF MATERIALS AND STRUCTURES

MS Organizers: Konstantinos V. Spiliopoulos, Dieter Weichert
Chair: Eric Charkaluk

10324 KEYNOTE: ADVANCES OF THE RSDM TO THE SHAKEDOWN ANALYSIS OF STRUCTURES

Konstantinos Spiliopoulos, Konstantinos Panagiotou, Ioannis Kapogiannis

7530 COMPOSITE FEM MODELS FOR LIMIT AND SHAKEDOWN ANALYSIS

Leonardo Leonetti, Giovanni Garcea, Hung Nguyen-Xuan

8109 ELASTOPLASTIC DESIGN OF AEROTHERMALLY HEATED AIRCRAFT SURFACES

Natasha Vermaak, Ismail S. Cinoglu, Jerard V. Gordon

9528 SHAKEDOWN STATE IN POLYCRYSTALS: A DIRECT NUMERICAL ASSESSMENT

Eric Charkaluk, Domenico Magisano, Pierre Baudoin, Géry de Saxcé, Andrei Constantinescu

Monday, June 6	Room 12
14:00-16:00	

MS 917 - 1: MESOSCOPIC METHODS FOR COMPLEX FLUIDS AND SOFT MATTER

MS Organizers: Zhen Li, Wenxiao Pan, Igor V. Pivkin
Chair: Zhen Li

8887 COARSE-GRAINED PROTEIN MODEL FOR DISSIPATIVE PARTICLE DYNAMICS

Emanuel Peter, Kirill Lykov, Igor Pivkin

8113 ON THE NUMERICAL TREATMENT OF DISSIPATIVE PARTICLE DYNAMICS AND RELATED SYSTEMS: AN ADAPTIVE FORMULATION

Xiaocheng Shang, Benedict Leimkuhler

5060 MULTISCALE SIMULATION OF MOLECULAR DYNAMICS AND DISSIPATIVE PARTICLE DYNAMICS VIA THE ADAPTIVE RESOLUTION SCHEME

Xin Bian, Zhen Li, Yu-Hang Tang, George Em Karniadakis

4932 BOTTOM-UP CONSTRUCTION OF NON-MARKOVIAN COARSE-GRAINED MODEL FOR POLYMERIC FLUIDS

Zhen Li, Xin Bian, Xiantao Li, George Karniadakis

8495 PARTICLE BASED SIMULATION OF FLUID FLOW IN PERIODICALLY GROOVED CHANNELS

Dorothea Kasiteropoulou, Theodoros Karakasidis, Antonios Liakopoulos

Monday, June 6	Room 15
14:00-16:00	

CS 930 - 1: HIGH-ORDER DISCRETIZATION METHODS

Chair: Clinton Groth

9049 A PARALLEL HIGH-ORDER CENO FINITE-VOLUME METHOD FOR LARGE-EDDY SIMULATION OF TURBULENT REACTIVE FLOWS

Clinton Groth, Luiz Tobaldini Neto

6203 A COMPARISON OF VARIOUS NODAL DISCONTINUOUS GALERKIN METHODS FOR THE 3D EULER EQUATIONS

Michael Bergmann, Svetlana Drapkina, Graham Ashcroft, Christian Frey

8183 MESH ADAPTATION FOR VERY HIGH ORDER FINITE ELEMENTS

Olivier Coulaud, Frédéric Alauzet, Adrien Loseille

7557 PERFORMANCE OF A DOMAIN DECOMPOSITION METHOD FOR HIGH-ORDER FEM

Alice Lieu, Hadrien Bériot, Gwénaël Gabard, François-Xavier Roux

7830 REQUIREMENTS OF GRID RESOLUTION IN WALL-RESOLVED LES USING HIGH-ORDER DG-CRI SCHEME

Hiroyuki Asada, Soshi Kawai, Keisuke Sawada

11734 ASSESSMENT OF DISCONTINUOUS GALERKIN SCHEME FOR HIGH-FIDELITY SIMULATIONS OF TURBULENT FLOWS

Eric Ching, Yu Lv, Peter Ma, Matthias Ihme

Monday, June 6	Room 17
14:00-16:00	

CS 1020 - 1: EVOLUTIONARY AND DETERMINISTIC METHODS FOR DESIGN, OPTIMIZATION AND CONTROL

Chair: Paolo Castaldo

7588 SEISMIC RETROFIT OF EXISTING BUILDINGS THROUGH THE DISSIPATIVE COLUMNS

Paolo Castaldo, Bruno Palazzo, Francesco Perri, Ivana Marino, Marco Faraco

7577 SEISMIC RELIABILITY-BASED DESIGN OF STRUCTURES ISOLATED BY FPS

Paolo Castaldo, Guglielmo Amendola, Bruno Palazzo

13458 RELIABILITY TEST DEMONSTRATION METHOD FOR EXPONENTIAL LIFE SYSTEM WITH RELIABILITY GROWTH UNDER THE CONDITION OF IN-TIME CORRECTIVE STRATEGY

Yunyan Xing, Ping Jiang, Feng Yao, Zhiwei Yang, Michael Emmerich, Thomas Bäck

7610 AN EXAMPLE OF ENERGY DISSIPATION OPTIMIZATION FOR STEEL MRFS WITH PIN-JOINT COLUMN BASES

Elide Nastri, Annabella Paciello

7614 ECCENTRICALLY BRACED FRAMES DESIGNED FOR THE ENERGY DISSIPATION OPTIMIZATION

Elide Nastri

Monday, June 6	Room 18
14:00-16:00	

CS 751 - 1: SMART MATERIALS AND STRUCTURES

Chair: Ryan Orszulik

7571 FULL SYSTEM MODELING OF A THREE DEGREE OF FREEDOM PIEZOELECTRICALLY DRIVEN NANOPositionING PLATFORM INCLUDING POSITION FEEDBACK CONTROL

Ryan Orszulik, Ulrich Gabbert

9224 SIMULATION OF AN EXTRINSIC AND AUTONOMOUS SELF-HEALING MATERIAL USING THE THEORY OF POROUS MEDIA

Steffen Specht, Joachim Bluhm, Jörg Schröder

10578 A THERMOMECHANICAL MODEL OF SHAPE MEMORY ALLOYS IN FINITE DEFORMATION

Jun Wang, Ziad Moumni, Weihong Zhang

10919 SHAKEDOWN BASED MODEL FOR HIGH CYCLE FATIGUE OF SHAPE MEMORY ALLOYS

Xiaojun Gu, Ziad Moumni, Wael Zaki, Weihong Zhang

11624 FREQUENCY EFFECT ON CYCLIC BEHAVIOR AND LOW-CYCLE FATIGUE OF PSEUDOELASTIC SHAPE MEMORY ALLOYS

Yahui Zhang, Ziad Moumni, Yajun You, Weihong Zhang

Monday, June 6	Room 20
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DAY 1 – MONDAY, JUNE 6

14:00-16:00		Monday, June 6 14:00-16:00	Room 22
CS 230: MODELLING OF CONCRETE AND MEASURING	<i>Chair:</i> Etienne Malachanne	MS 902 - 1: INNOVATIVE NUMERICAL APPROACHES FOR MULTI-PHYSICS PROBLEMS	
5387 A COHESIVE ZONE MODEL FOR THE CHARACTERISATION OF THE INTERFACIAL TRANSITION ZONE (ITZ) BETWEEN CEMENT PASTE AND AGGREGATE <i>Etienne Malachanne, Marie Salgues, Mouad Jebli, Frederic Jamin</i>		<i>MS Organizers:</i> Anna Pandolfi, Laurent Stainier, Kerstin Weinberg	
11714 ACCURATE AND EFFICIENT MODELING OF THE CYCLIC BEHAVIOR OF RC STRUCTURAL MEMBERS <i>Christos Mourlas, Manolis Papadrakakis, George Markou</i>		6991 NUMERICAL PROPERTIES OF A DISCONTINUOUS GALERKIN FORMULATION FOR ELECTRO-THERMAL COUPLED PROBLEMS <i>Lina Homsi, Christophe Geuzaine, Ludovic Noels</i>	
7856 AN EXACT SHEAR STRAIN APPROACH FOR RC FRAME ELEMENTS WITH AXIAL-SHEAR INTERACTION. <i>Alexander Kagermanov, Paola Ceresa</i>		6329 THE SCHWARZ ALTERNATING METHOD FOR CONCURRENT MULTISCALE IN FINITE DEFORMATION SOLID MECHANICS <i>Alejandro Mota, Irina Tezaur, Coleman Alleman</i>	
11947 CROSS-SECTIONAL FAILURE CRITERION COMBINED WITH STRAIN-HARDENING DAMAGE MODEL FOR SIMULATION OF THIN-WALLED TEXTILE-REINFORCED CONCRETE SHELLS <i>Ehsan Sharei, Rostislav Chudoba, Alexander Scholzen</i>		5327 MATHEMATICAL MODELS OF IN VIVO LARGE MICROCIRCULATORY NETWORKS <i>Francesca Margaroli, Paola Causin</i>	
5328 A MESOSCALE FINITE ELEMENT MODEL FOR FIBRE REINFORCED CONCRETE <i>Philip Huschke, Jörg F. Unger</i>		10474 PHASE-FIELD MODELING OF FRACTURE IN HYDROGELS UNDERGOING LARGE DEFORMATION COUPLED TO DIFFUSION <i>Lukas Böger, Christian Miehe</i>	
16740 SEISMIC ASSESSMENT OF A 5-STORY RETROFITTED RC BUILDING <i>Hussein Bark, George Markou, Christos Mourlas, Manolis Papadrakakis</i>		10018 PHASE-FIELD APPROACH FOR PRESSURE DRIVEN CRACK PROPAGATION <i>Carola Bilgen, Christian Hesch, Kerstin Weinberg</i>	
		7782 A REDUCED-ORDER HETEROGENEOUS MULTI-SCALE METHOD FOR SIMULATION OF COMPLEX FLUID FLOWS <i>Nehzat Emamy, Maria Lukacova, Thorsten Raasch, Leonid Yelash, Peter Virnau, Florian Kummer</i>	
Monday, June 6 14:00-16:00	Room 21	Monday, June 6 14:00-16:00	Room 23
CS 1010 - 1: COMPUTATIONAL INVERSE PROBLEMS AND OPTIMIZATION	<i>Chair:</i> Tamara Nestorović	MS 913 - 1: HIGH-ORDER METHODS FOR POLYGONAL AND POLYHEDRAL MESHES	
12084 INVERSION METHODS BASED ON KALMAN FILTERING FOR IDENTIFICATION IN TUNNELING PROBLEMS <i>Tamara Nestorović, Luan T. Nguyen</i>		<i>MS Organizers:</i> Lourenço Beirao da Veiga, Franco Brezzi, Donatella Marini, Alessandro Russo	
6841 METEOROLOGICAL DATA ASSIMILATION USING AN ADJOINT PROGRAM GENERATED BY AUTOMATIC DIFFERENTIATION <i>Yasuyoshi Horibata</i>		6317 KEYNOTE: SERENDIPITY NODAL VEM SPACES <i>Lourenco Beirao da Veiga, Franco Brezzi, Donatella Marini, Alessandro Russo</i>	
8388 A FRAMEWORK FOR THE DESIGN BY OPTIMIZATION OF HYDROFOILS UNDER CAVITATING CONDITIONS <i>Paolo Olivucci, Stefano Gaggero</i>		6247 VEM AND TOPOLOGY OPTIMIZATION ON POLYGONAL MESHES <i>Paola F. Antonietti, Matteo Bruggi, Simone Scacchi, Marco Verani</i>	
11693 APPLICATION OF THE DECONVOLUTION METHODS FOR PROCESSING OF MEASUREMENT SIGNALS IN THE FAST PROCESSES <i>Marat Goldfeld, Valery Pickalov</i>		6682 VIRTUAL ELEMENT METHOD FOR THE LAPLACE-BELTRAMI EQUATION ON SURFACES <i>Massimo Frittelli, Ivonne Sgura</i>	
7315 EVOLUTIONARY TOPOLOGY OPTIMIZATION USING PARAMETERIZED B-SPLINE SURFACE <i>Igor Pehnec, Damir Vucina, Frane Vlak</i>		6410 HYBRID HIGH-ORDER DISCRETIZATIONS OF DIFFUSION PROBLEMS WITH VARIABLE COEFFICIENTS <i>Daniele A. Di Pietro, Alexandre Ern, Simon Lemaire</i>	
		4894 A HYBRID HIGH-ORDER METHOD FOR THE CAHN-HILLIARD EQUATION <i>Florent Chave, Daniele A. Di Pietro, Fabien Marche</i>	

16:00-16:30
Coffee Break

DAY 1 – MONDAY, JUNE 6

TECHNICAL SESSIONS

Monday, June 6	Zeus East
16:30-18:30	

CS 990 - 2: PARTICLE-BASED METHODS

Chair: Valeri Saveliev

- 9323** STATISTICAL DISTRIBUTION FUNCTION FOR THE CHARGED PARTICLES IN MAGNETIC FIELD
B.Chetverushkin, Nicola D'Ascreno, Valeri Saveliev
- 7091** CONTACT METHODS FOR THE INTERACTION OF PARTICLES WITH RIGID AND DEFORMABLE STRUCTURES USING A COUPLED DEM-FEM PROCEDURE
Miquel Santasusana, Eugenio Oñate, Joaquín Irazábal, Josep M. Carbonell
- 10329** BLOOD FLOW SIMULATION USING SMOOTHED PARTICLE HYDRODYNAMICS
Mohammed Al-Saad, Sivakumar Kulasegaram, Stephane P.A. Bordas
- 5888** TOWARDS MULTIPHYSICS SIMULATION OF DEEP PENETRATION LASER WELDING USING SMOOTHED PARTICLE HYDRODYNAMICS
Haoyue Hu, Peter Eberhard, Florian Fetzer, Peter Berger
- 9045** MULTIPLE TIMESCALE MODELLING OF PARTICLES DE-AGGLOMERATION IN METAL MELTS SUBJECT TO EXTERNAL FORCES
Anton Manoylov, Georgi Djambazov, Valdis Bojarevics, Koulis Pericleous
- 9715** A DISCRETE ELEMENT APPROACH FOR SIMULATING THE PROCESSING OF FIBROUS BIOMASS
Tom Leblieq, Simon Vanmaercke, Herman Ramon, Wouter Saeyns

Monday, June 6	Zeus West
16:30-18:30	

MS 609 - 2: ADVANCED COMPUTATIONAL MODELING OF BATTERIES AND FUEL CELLS

MS Organizers: Edwin Knobbe, Wolfgang A. Wall
Chair: Wolfgang A. Wall

- 11876** CHALLENGES FOR ELECTRO-CHEMICAL SIMULATIONS OF LITHIUM-ION CELLS FOR AUTOMOTIVE APPLICATIONS
Edwin Knobbe, Georg Bauer, Peter Lamp
- 11828** PERFORMANCE MODELING OF ALL-SOLID-STATE LITHIUM-ION BATTERIES
André Weber, Philipp Braun, Ellen Ivers-Tiffée
- 10241** TEMPERATURE DEPENDENT THERMODYNAMIC FACTORS AND TRANSFERENCE NUMBERS OF LITHIUM ION BATTERY ELECTROLYTES
Johannes Landesfeind, Martin Frankenberger, Andreas Ehrl, Wolfgang A. Wall, Hubert A. Gasteiger
- 10199** LOCAL POTENTIAL MEASUREMENTS WITHIN MODIFIED COMMERCIAL LI-ION BATTERIES FOR VALIDATION OF MULTI-DIMENSIONAL MODELS
Simon Vincent Erhard, Patrick Jürgen Osswald, Alexander Rheinfeld, Jörn Wilhelm, Stephan Kosch, Andreas Jossen

- 10179** LOCALISED THERMAL AND ELECTRICAL EFFECTS DURING HIGH CURRENT SCENARIOS FOR IDENTIFYING LIMITING PERFORMANCE AND SAFETY CHARACTERISTICS OF LITHIUM-ION CELLS
Alexander Rheinfeld, Simon Vincent Erhard, Stephan Kosch, Andreas Jossen

Monday, June 6	Zeus North
16:30-18:30	

MS 906 - 2: MATHEMATICAL ADVANCES IN ISOGEOMETRIC ANALYSIS

MS Organizers: Annalisa Buffa, John A. Evans, Thomas J.R. Hughes, Giancarlo Sangalli

- Chair:* Mattia Tani
- 11276** KEYNOTE: MULTIGRID METHODS FOR ISOGEOMETRIC STRUCTURE-PRESERVING DISCRETIZATIONS
John Evans, Joseph Benzaken, Christopher Coley
- 11557** SPACE-TIME ISOGEOMETRIC ANALYSIS OF PARABOLIC EVOLUTION PROBLEMS
Ulrich Langer, Stephen E. Moore, Martin Neumüller
- 11721** ADAPTIVE METHODS FOR STOKES
Andrea Bressan, Bert Jüttler
- 5250** SEMI ANALYSIS-SUITABLE T-SPLINES
Xin Li
- 8932** MULTIPATCH CUT ISOGEOMETRIC ANALYSIS OF PDES ON SURFACES
Tobias Jonsson, Mats G. Larson, Karl Larsson

Monday, June 6	Minos East
16:30-18:30	

MS 501 - 2: ALGORITHMIC ASPECTS OF HIGH-PERFORMANCE COMPUTING FOR MECHANICS AND PHYSICS

MS Organizers: Santiago Badia, Victor Calo, Javier Principe
Chair: Javier Principe

- 6297** PARALLEL NUMERICAL LINEAR ALGEBRA: SOME RECENT STEPS TOWARDS EXTREME SCALE
Louis Poirel, Emmanuel Agullo, Mathieu Faverge, Luc Giraud
- 9277** DOMAIN DECOMPOSITION WITH OPTIMIZED SCHWARZ METHODS IN HPDDM LIBRARY
Ryadh Haferssas, Pierre Jolivet, Frédéric Nataf
- 7245** ENHANCING THE EFFICIENCY AND ROBUSTNESS OF MONOLITHIC FLUID-STRUCTURE INTERACTION SOLVERS
Matthias Mayr, Michael W. Gee
- 11812** FAST COMPUTATIONS ON GPUS FOR WETTING PHENOMENA
Grigoris Kasapidis, George Pashos, George Kokkoris, Andreas G. Boudouvis
- 12127** ENHANCING THE PERFORMANCE OF PRIMAL AND DUAL DOMAIN DECOMPOSITION SOLVERS IN THE CONTEXT OF STRUCTURAL DYNAMICS
George Stavroulakis, Manolis Papadrakakis
- 10903** EXTREME SCALE STABILIZED FINITE ELEMENT FLOW SIMULATIONS
Kenneth Jansen, Michel Rasquin, Cameron Smith, Benjamin Matthews

<p>Monday, June 6 16:30-18:30</p> <p>MS 1101 - 2: REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES</p> <p><i>MS Organizers:</i> Francisco Chinesta, Elias Cueto, Antonio Huerta, Pierre Ladeveze, Gianluigi Rozza <i>Chair:</i> Gianluigi Rozza</p> <p>6407 ON THE MODEL ORDER REDUCTION OF SHAPE-DEPENDENT PARAMETRIC PROBLEMS <i>David González, Elias Cueto, Francisco Chinesta</i></p> <p>9013 RECENT ADVANCES AND PERSPECTIVES ON REDUCED ORDER MODELLING IN COMPUTATIONAL FLUID DYNAMICS AND BEYOND <i>Francesco Ballarin, Gianluigi Rozza</i></p> <p>7700 DIMENSIONAL HYPERREDUCTION OF HIERARCHICAL MULTISCALE MODELS <i>Joaquín A. Hernández, Javier Oliver</i></p> <p>9280 MODEL ORDER REDUCTION IN STRUCTURAL DYNAMICS <i>Raul Rodriguez Sanchez, Martin Buchschmid, Gerhard Müller</i></p> <p>6520 PARAMETRIC SIMULATION OF THE RAILWAY Catenary INCLUDING DROPPER SLACKENING AND APPLYING THE PGD TECHNIQUE <i>Santiago Gregori, Manuel Tur, Enrique Nadal, F. Javier Fuenmayor, Francisco Chinesta</i></p> <p>8748 REDUCING OFFLINE COST FOR ECSVW HYPER-REDUCED MODELS FOR FINITE ELEMENT DISCRETIZED NONLINEAR STRUCTURAL DYNAMICS <i>Paolo Tiso, Shobhit Jain</i></p>	<p>Minos North</p>	<p>Monday, June 6 16:30-18:30</p> <p>MS 1001 - 1: STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION</p> <p><i>MS Organizers:</i> J.F. Aguilar Madeira, Helder C. Rodrigues <i>Chair:</i> José Guedes</p> <p>9436 COMPUTING GLOBAL AND LOCAL PARETO FRONTS WITH DIRECT SEARCH <i>A. L. Custodio, J. F. A. Madeira</i></p> <p>5081 AN ARCHITECTURE-ORIENTED APPROACH IN SHAPE AND TOPOLOGY OPTIMIZATION <i>Georgios Michailidis, François Jouve</i></p> <p>6074 STRUCTURAL SHAPE OPTIMIZATION USING A FICTITIOUS DOMAIN DISCRETIZATION TECHNIQUE <i>Stefan Riehl, Paul Steinmann</i></p> <p>5544 SHAPE-TOPOLOGY OPTIMIZATION FOR DESIGNING SHELL STRUCTURES <i>Hirotaka Nakayama, Masatoshi Shimoda</i></p> <p>9949 SHAPE OPTIMIZATION FOR CONTACT PROBLEMS IN LINEAR ELASTICITY <i>Aymeric Maury</i></p> <p>16640 FORM FINDING ON PARAMETRIC SURFACES. OPTIMIZATION AND CORRELATIONS OF ARCHITECTURAL FLUIDITY AND STRUCTURAL RESPONSE <i>Dimitrios Antoniou, Katerina Liapi, Nikolaos Bakas, Ioakeim Liassides, Ioannis Georgiou, Nikolaos Varlagkas</i></p>	<p>Danae</p>
<p>Monday, June 6 16:30-18:30</p> <p>MS 503 - 2: HPC-BASED SIMULATIONS FOR THE ENGINEERING REALM AND INDUSTRIAL APPLICATIONS</p> <p><i>MS Organizers:</i> Makoto Tsubokura, Mariano Vázquez, Takayuki Aoki <i>Chair:</i> Takayuki Aoki</p> <p>8547 DIRECT AEROACOUSTIC SIMULATION RELATED WITH MODE CHANGE IN A RECORDER <i>Hiroshi Yokoyama, Ryoma Hamasuna, Akira Miki, Hirofumi Onitsuka, Akiyoshi Iida</i></p> <p>8335 MULTI-PHYSICS AERODYNAMICS SIMULATION OF FULL-SCALE ROAD VEHICLE FOR ENGINEERING DESIGN PROCESS BASED ON LARGE-SCALE PARALLEL CFD FRAMEWORK <i>Keiji Onishi, Makoto Tsubokura, Takashi Kamioka</i></p> <p>7041 EFFECT OF FUEL RATIO OF BITUMINOUS COALS ON PULVERIZED COAL COMBUSTION IN MULTI-BURNER SYSTEM USING LARGE-EDDY SIMULATION <i>Masaya Muto, Hiroaki Watanabe, Ryoichi Kurose</i></p> <p>8074 LARGE-SCALE LES ANALYSIS OF AUTOMOTIVE ENGINE COOLING FAN <i>Yuji Kobayashi, Kenji Yoshida, Itsuhei Kohri, Masaharu Sakai, Hideo Asano</i></p> <p>7553 NON-INTRUSIVE DOMAIN DECOMPOSITION ALGORITHM FOR SOLVING NONLINEAR PROBLEMS <i>Mickaël Duval, Stéphane Guinard, Jean-Charles Passieux, Michel Salaün</i></p>	<p>Minos South</p>	<p>Monday, June 6 16:30-18:30</p> <p>MS 914 - 2: INNOVATIVE NON-BOUNDARY-FITTED DISCRETIZATION METHODS</p> <p><i>MS Organizers:</i> Fehmi Cirak, John E. Dolbow, Isaac Harari, Ming-Chen Hsu, Thomas J.R. Hughes, Dominik Schillinger <i>Chair:</i> Fehmi Cirak</p> <p>8982 A DISCONTINUOUS CUT FINITE ELEMENT FRAMEWORK FOR MULTIDIMENSIONAL MULTIPHYSICS PROBLEMS <i>Erik Burman, Peter Hansbo, Mats G. Larson, Andre Massing</i></p> <p>11122 MODELING OF LI-ION BATTERY COMPOSITE ELECTRODES WITH THE FINITE CELL METHOD <i>Ying Zhao, Dominik Schillinger, Bai-Xiang Xu</i></p> <p>11328 HIGHER-ORDER IMMERSSED B-SPLINE FINITE ELEMENTS <i>Musabbir Majeed, Fehmi Cirak</i></p> <p>7519 CUTFEM ON HIERARCHICAL B-SPLINE CARTESIAN GRIDS WITH APPLICATIONS TO FLUID-STRUCTURE INTERACTION <i>Chennakesava Kadapa, Wulf Dettmer, Djordje Peric</i></p>	<p>Europa</p>
<p>Monday, June 6 16:30-18:50</p> <p>MS 706: MODELING OF FIBER-BASED STRUCTURES - TEXTILES AND TEXTILE REINFORCED COMPOSITES</p> <p><i>MS Organizers:</i> Yordan Kyosev, Philippe Boisse, Nahiene Hamila, Damien Durville <i>Chair:</i> Joris Remmers</p> <p>10596 MULTI-SCALE FRAMEWORK FOR MODELLING CARBON FIBRE WEAVES BASED ON STOCHASTIC REINFORCEMENT GEOMETRY <i>Andy Vanaerschot, Karen Soete, Stepan Lomov, Dirk Vandepitte</i></p>	<p>Leda</p>		

DAY 1 – MONDAY, JUNE 6

7909	LEVEL SET-BASED TOOLS FOR THE GENERATION AND DISCRETIZATION OF TEXTILE-REINFORCED COMPOSITE RVEs <i>Badadjida Wintiba, Bernard Sonon, Thierry J. Massart</i>	8229	PRECONDITIONING THE FINITE CELL METHOD WITH APPLICATION TO FLUID-STRUCTURE INTERACTIONS <i>Frits de Prenter, Clemens Verhoosel, Harald van Brummelen</i>
11703	FROM IMAGES OR VOXELS TO FEM MODELS. APPLICATION TO THE MESHING OF 3D INTERLOCK COMPOSITE STRUCTURES <i>Alain Rassineux, Gaëtan Hello, Zoheir Aboura, Julien Schneider</i>	8999	WEAK IMPOSITION OF CONTACT CONSTRAINTS ON AUTOMATICALLY RECOVERED HIGH ORDER EMBEDDED INTERFACES <i>Tino Bog, Nils Zander, Stefan Kollmannsberger, Ernst Rank</i>
11254	AN ISOGEOMETRIC ANALYSIS BASED FINITE CELL METHOD FOR THE ANALYSIS OF FAILURE IN 3D WOVEN COMPOSITES <i>Joris Remmers, Sebastiaan Brandhof, Clemens Verhoosel</i>	8878	CUTFEM FOR LINEAR ELASTICITY <i>Peter Hansbo, Mats G Larson, Karl Larsson</i>
9824	INVERSE IDENTIFICATION OF THE BENDING STIFFNESS OF A BRAIDED POLYETHYLENE TWINE SUBJECT TO LARGE DEFORMATION: APPLICATION TO THE IDENTIFICATION OF THE MESH OPENING RIGIDITY OF FISHING NETS <i>Barthélémy Morvan, Guilhem Bles, Nicolas Dumergue, Daniel Priour</i>	8933	AUTOMATIC ELASTIC CHARACTERIZATION OF ALUMINIUM FOAMS FROM IMAGES BY USING H-ADAPTED MESHES WITH THE CARTESIAN GRID FINITE ELEMENT METHOD <i>L. Giovannelli, A.C. Cárcel, B. Cárcel, Juan José Ródenas</i>
9020	AN OPTIMIZED MODEL OF DUAL-SCALE GEOMETRY OF TEXTILE REINFORCEMENT BASED ON X-RAY MICROTOMOGRAPHY FOR MODELING OF RTM PROCESSES <i>Anna Madra, François Trochu, Piotr Breitkopf</i>	Monday, June 6 16:30-18:30	
5239	NUMERICAL STUDY OF DAMAGE AT THE MESOSCOPIC SCALE OF WOVEN POLYMER MATRIX COMPOSITES. <i>Christian Fagiano, Aurélien Doitrand, Vincent Chiaruttini, François-Henri Leroy, Martin Hirsekorn</i>	Aphrodite	

Monday, June 6	Athena
16:30-18:30	

MS 302 - 2: MESH GENERATION AND ADAPTION	
<i>MS Organizers:</i>	Josep Sarrate, Xevi Roca, Rafael Montenegro, Elio Ruiz
<i>Chair:</i>	Josep Sarrate
6836	AN ERROR-ESTIMATE-FREE MESH REFINEMENT AND COARSENING METHOD FOR THE PHASE FIELD APPROACH TO FRACTURE <i>Yihuan Li, Yongxing Shen</i>
8097	R-ADAPTATION STRATEGIES FOR WAVE RUNUP ON COMPLEX BATHYMETRIES <i>Luca Arpaia, Mario Ricchiuto</i>
8380	UNIVERSAL MESHES FOR BRANCHED CRACK PROPAGATION <i>Can Wu, Yongxing Shen</i>
8424	CARTESIAN MESHES WITH DYNAMIC LOCAL WAVELET-BASED REFINEMENT FOR FLOW AROUND BODY PROBLEMS. <i>Kirill Merkulov, Igor Menshov, Andrew Plenkin</i>
7307	ANALYSIS OF SEVERAL OBJECTIVE FUNCTIONS FOR OPTIMIZATION OF HEXAHEDRAL MESHES <i>José Iván López González, Marina Brovka, José María Escobar Sánchez, Rafael Montenegro Armas, Guillermo Valentín Socorro Marrero</i>

Monday, June 6	Artemis
16:30-18:30	

MS 903 - 2: ADVANCES IN FICTITIOUS DOMAIN METHODS FOR SOLID MECHANICS	
<i>MS Organizers:</i>	Alexander Düster, Ernst Rank, Stefan Kollmannsberger, Andreas Schröder
<i>Chair:</i>	Alexander Düster
9398	KEYNOTE: A FICTITIOUS DOMAIN LEVELSET METHOD FOR INCLUSION DETECTION <i>Herbert Egger</i>

Monday, June 6	Aphrodite
16:30-18:30	

MS 921 - 2: RECENT ADVANCES IN BOUNDARY ELEMENT METHODS

MS Organizers: Gernot Beer, Luiz Wrobel, Martin Schan
Chair: Gernot Beer

9429	A NEW A POSTERIORI ERROR ESTIMATE FOR THE BEM IN 3D-ACOUSTICS <i>Marc Bakry, Sébastien Pernet, Francis Collino</i>
5899	ENERGETIC BEM FOR THE NUMERICAL SOLUTION OF DAMPED WAVE PROPAGATION EXTERIOR PROBLEMS <i>Alessandra Aimi, Mauro Diligenti, Chiara Guardasoni</i>
10422	TREFFTZ-BASED DUAL RECIPROCITY METHOD FOR NON-HOMOGENEOUS HYPERBOLIC BOUNDARY VALUE PROBLEMS <i>Ionut Dragos Moldovan, Lucian Radu</i>
7197	A CHEBYSHEV INTERPOALTION-BASED FAST MULTIPOLE METHOD FOR POROELASTICITY <i>Barbara Knöbl, Martin Schanz</i>
10279	ANISOTROPIC MESH ADAPTATION FOR THE BOUNDARY ELEMENT METHOD <i>Samuel Groth, Stéphanie Chaillat, Francis Collino, Adrien Loseille</i>
11838	A FEM-BEM NON CONFORMING COUPLING FOR WAVE PROPAGATION PROBLEMS IN UNBOUNDED DOMAINS <i>Silvia Bertoluzza, Silvia Falsetta, Giovanni Monegato</i>

Monday, June 6	Antigoni
16:30-18:30	

MS 1306 - 2: ERCOFTAC SIG-45: UNCERTAINTY QUANTIFICATION IN CFD AND FLUID STRUCTURE INTERACTION

MS Organizers: Didier Lucor, Sunetra Sarkar

Chair: Sunetra Sarkar

9082	TEST CASE BL3 - HEAVING AND PITCHING AIRFOIL, 4TH INTERNATIONAL WORKSHOP ON HIGH-ORDER CFD METHODS <i>Per-Olof Persson, Krzysztof Fidkowski</i>
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DAY 1 – MONDAY, JUNE 6

- 10891** LOW RANK APPROXIMATION AND SAMPLING BASED METHOD FOR RANDOM VIBRO-ACOUSTIC ANALYSIS
Mathilde Chevreuil, Cédric Leblond, Yendoubouam Tampango, Anthony Nouy, Jean-François Sigrist

10670 A KRIGING-PDD SURROGATE MODEL FOR UNCERTAINTY QUANTIFICATION
Andrea Francesco Cortesi, Pietro Marco Congedo

10164 UNCERTAINTY QUANTIFICATION IN NUMERICAL SIMULATIONS OF THE FLOW IN THORACIC AORTIC ANEURYSMS
Alessandro Boccadifuoco, Alessandro Mariotti, Simona Celi, Nicola Martini, Maria Vittoria Salvetti

10640 REVIEW OF MULTI-FIDELITY SURROGATE MODELS
M. Giselle Fernandez-Godino, Chanyoung Park, Nam Ho Kim, Raphael T. Haftka

MS 303 - 2 : CURVED MESH GENERATION FOR HIGH-ORDER METHODS

MS Organizers: Xevi Roca, Josep Sarraté
Chair: Xevi Roca

- 7234** HIGH-ORDER CURVED MESH GENERATION BY USING A FINE TARGET MESH
Verena Schmid, Hadrien Beriot, Onur Atak, Gwenael Gabard

7117 VALIDATING AND GENERATING CURVED UNSTRUCTURED HEXAHEDRAL MESHES
Abel Gargallo-Peiró, Eloi Ruiz-Gironés, Josep Sarrate, Xevi Roca

9380 HIGH-ORDER GEOMETRIC PDE-DRIVEN SMOOTHING ON SURFACE MESHES
Tristan Delaney, Xiangmin Jiao

10770 IMAGE SEGMENTATION TECHNIQUES FOR BIOMEDICAL MODELING: ELECTROPHYSIOLOGY AND HEMODYNAMICS
Alexander Danilov, Roman Pryamonosov, Alexandra Yurova

Monday, June 6 **Apollo West**
16:30-18:30

MS 1104 - 2: REDUCED-ORDER MODELS FOR PDE-CONSTRAINED OPTIMIZATION AND INVERSE PROBLEMS

MS Organizers: Alfio Quarteroni, Andrea Manzoni
Chair: Karsten Urban

- 9223** CALIBRATION WITH REDUCED ORDER MODELS
Ekkehard Sachs, Marina Schneider

5877 GENERALIZED SPACE-TIME-INPUT SPACE POD FOR OPTIMAL CONTROL OF THE UNSTEADY BURGERS EQUATION
Peter Benner, Jan Heiland

5401 REDUCED BASIS LANDWEBER METHOD FOR NONLINEAR ILL-POSED INVERSE PROBLEMS
Dominik Garmatter, Bastian Harrach, Bernard Haasdonk

8720 ROBUST PDE-CONSTRAINED OPTIMIZATION USING A SECOND ORDER APPROXIMATION TECHNIQUE AND MODEL ORDER REDUCTION
Oliver Lass, Stefan Ulbrich

Monday, June 6 **Room 1**
16:30-18:30

MS 1307 - 2: NON-INTRUSIVE SURROGATE MODELS FOR UNCERTAINTY QUANTIFICATION IN HIGH DIMENSIONS

MS Organizers: Bruno Sudret, Eleni Chatzi, Jean-Marc Bourinet, Nicolas Gayton

Chair: Vasilis Dertimanis

- 7382** CALIBRATION OF NESTED COMPUTER MODELS
Sophie Marque-Pucheu, Guillaume Perrin, Josselin Garnier

6762 AN OPTIMAL SENSOR PLACEMENT METHOD FOR SHM BASED ON BAYESIAN EXPERIMENTAL DESIGN AND POLYNOMIAL CHAOS EXPANSION
Giovanni Capellari, Eleni Chatzi, Stefano Mariani

12362 OPTIMAL AND RELIABLE DESIGN OF THE BONDING WIRE FOR A POWER MODULE BY USING RELIABILITY-BASED DESIGN OPTIMIZATION AND A KRIGING METAMODEL
Younes Aoues, Abderahman Makhlofi, Philippe Pouquet, Abdelkhalak El-Hami

5946 BEARING CAPACITY OF STRIP FOOTINGS ON SPATIALLY RANDOM SOILS USING KRIGING AND MONTE CARLO SIMULATION
Jawad Thajeeel, Tamara Al-Bittar, Nour Issa, Abdul Hamid Soubra

MS 1309 - 1: SCALABLE MULTI-FIDELITY MODELING FOR DESIGN, UNCERTAINTY QUANTIFICATION, AND INVERSE PROBLEMS

MS Organizers: Paris Perdikaris, George Em. Karniadakis
Chair: Paris Perdikaris

- 8901** DATA-INFORMED COARSE-GRAINING FOR TURBULENT FLOW SIMULATIONS
Karthik Duraisamy, Eric Parish

8951 DESIGN OPTIMIZATION WITH QUANTIFIED UNCERTAINTIES UNDER A COMPUTATIONAL BUDGET
Ilias Bilionis, Piyush Pandita, Jitesh Panchal

Monday, June 6
16:30-18:30

CS 420 - 2: MULTI-PHASE AND CHEMICALLY REACTING FLOWS

Chair: Taku Nonomura

- 10945** ON THE THICKNESS OF DISCONTINUITIES COMPUTED BY THINC AND RK SCHEMES
Taku Nonomura, Keh-Ming Shyue

11575 RESEARCH OF UNSTEADY FLOW REGIMES IN CHANNEL OF HYPERSONIC INLET
Natalya Fedorova, Marat Goldfeld

10224 CHARACTERISING DROPLET IMPACT ON A FLAT SURFACE USING THE VOLUME OF FLUID METHOD
Marco Macchi, Jennifer Wen, Konstantin Volkov, Ali Heidari, Yongmann Chung

11485 A 3D UNSTEADY NUMERICAL SIMULATION OF THE REFRIGERANT FLOW EVAPORATION IN A PLATE HEAT EXCHANGER
Mirza Popovac, Gerwin Schmid, Michael Lauerma

11834 EXPLICIT DARCY'S LAW BOUNDARY CONDITION WITH COMBINED CONTINUUM AND DISCRETE MODEL FOR PRESSURE DRIVEN MEMBRANE APPLICATIONS
Tomi Naukkarinen, Teemu Turunen-Saareni

Monday June 6

DAY 1 – MONDAY, JUNE 6

16:30-18:30

CS 211: CRACK PROPAGATION

Chair: Sylvia Feld-Payet

- 9741** A MARCHING RIDGES ALGORITHM FOR CRACK PATH TRACKING IN REGULARIZED MEDIA
Sylvia Feld-Payet
- 12182** CRACK PATH FIELD AND STRAIN INJECTION TECHNIQUES IN 3D FRACTURE MODELING OF QUASI-BRITTLE MATERIALS
Ivo F. Dias, Xavier Oliver, Oriol Lloberas-Valls
- 11625** 3D ADAPTIVE PROCESS OF CRACKS INITIATION AND PROPAGATION IN DUCTILE MATERIALS
Fangtao Yang, Alain Rassineux, Carl Labergere, Khemais Saanouni
- 6145** 2D CRACK MODELLING USING A NEW CRACKING PARTICLE METHOD COMBINED WITH AN ADAPTIVITY STRATEGY
Weilong Ai, Charles Augarde
- 11939** ULTRASONIC GUIDED WAVES INSPECTION OF PIPES FROM ONE END TO THE FIRST BENT
Mihai Valentin Predoi, Marian Soare, Ovidiu Vasile, Mihail Boianu
- 8270** DISCRETE CRACK DYNAMICS: A NEW TOOL TO STUDY THE CRACK PROPAGATION PATH
Mahdieh T. Ebrahimi, Daniele Dini, Daniel Balint, Adrian Sutton

Monday, June 6

Room 5

16:30-18:30

CS 840 - 2: MULTI-SCALE COMPUTATIONAL METHODS FOR SOLIDS AND FLUIDS

Chair: Antoine Brunet

- 6947** NONLINEAR PATCH METHOD AND APPLICATION
Antoine Brunet, Pierre Sarraillh, François Rogier, Jean-François Roussel, Denis Payan
- 6771** THE GEMA FRAMEWORK – AN INNOVATIVE FRAMEWORK FOR THE DEVELOPMENT OF MULTIPHYSICS AND MULTISCALE SIMULATIONS
Carlos Augusto Teixeira Mendes, Marcelo Gattass, Deane Roehl
- 7617** ASSESSMENT OF A CONTINUUM MICROMECHANICS-BASED MULTISCALE MODEL FOR CONCRETE BY MEANS OF SENSITIVITY ANALYSIS AND UNCERTAINTY PROPAGATION
Luise Göbel, Andrea Osburg, Tom Lahmer
- 8137** COUPLED ATOMISTIC/DISCRETE-DISLOCATION METHOD IN 3D
Max Hodapp, William Curtin, Jean-François Molinari, Guillaume Anciaux
- 8263** SOLUTION TECHNIQUES FOR ANISOTROPIC DIFFUSION OPERATORS ARISING IN MAGNETIZED EDGE PLASMA PHYSICS
Giorgio Giorgiani, Eric Serre, Frederic Schwander, Patrick Tamain
- 8775** INFLUENCE OF LODE ANGLE ON MODELLING OF MICRO VOIDS CLOSURE IN HOT METAL FORMING PROCESSES INFLUENCE
Abdelouahed Chbihi, Pierre-Olivier Bouchard, Marc Bernacki, Daniel Pino Muñoz

Monday, June 6

Room 7

16:30-18:30

CS 110 - 2: NUMERICAL MODELS IN BIOMECHANICS

Chair: Ángel Giménez

- 8437** IMPROVED GEOMETRICAL DESIGNS OF VENTRICULAR CATHETERS FOR HYDROCEPHALUS
Ángel Giménez, Marcelo Galarza, Olga Pellicer, José Valero, José M. Amigó

- 8331** A STUDY OF FUZZY CONTROL SYSTEM FOR PROPER ANASTOMOSIS CONDITION OF STAPLER
Soonmoon Jung, Hunhee Kim, Taekyeong Lee, Youngho Lee, Jaemin Kim, Heesuk Roh, Dongwook Yang, Junghwa Hong

- 6459** IN-HOUSE MULTIBODY HUMAN MODEL BASED ON EULER PARAMETERS FOR THE FAST IMPACT SCENARIO CALCULATION
Jan Spicka, Michal Hajzman, Tomasz Bonkowski

- 7094** MASS TRANSFER STUDY OF RHEOLOGICAL FLUIDS IN CAPILLARY MEMBRANE CONTACTORS USING A LBM-FD HYBRID MODEL
Jonathan Florez Giraldo, Clara Salueña, Salvatore Cito, Anton Vernet

- 8642** DEVELOPMENT OF A CENTRIFUGAL BLOOD PUMP FOR ECMO AND VAD OPERATIONS
Shinhwa Choi, Nahmkeon Hur, Mohammad Moshfeghi, Seongwon Kang, Wonjung Kim

- 8925** FINITE ELEMENT MODELING OF VISCOUS MEMBRANES WITH STOCHASTIC EFFECTS
Roberto F. Ausas, Fernando Mut, Gustavo C. Buscaglia

Monday, June 6

Room 9

16:30-18:30

CS 750 - 2: COMPUTATIONAL MODELING OF COMPOSITES

Chair: Thomas Bower

- 5844** MODELLING SOIL-FIBRE COMPOSITE BEHAVIOUR IN FINITE ELEMENT MODELS
Thomas Bower, Anthony Jefferson, Peter Cleall

- 9724** NUMERICAL SIMULATION OF MECHANICAL BEHAVIOUR OF COMPOSITE SANDWICH PANELS WITH DEFECTS
Aleksandr Anoshkin, Valerii Ziko, Mikhail Alikin, Anna Tchugaynova

- 5785** BOND OF REINFORCEMENT IN REACTIVE POWDER CONCRETE: EXPERIMENTAL STUDY
Mingde Sun, Ri Gao, Aili Li, Yongjing Wang

- 10915** A DUAL NUMERICAL HOMOGENIZATION TECHNIQUE FOR 2-D WOVEN FABRIC COMPOSITES
Juan Jose Espadas Escalante, Per Isaksson, Nico Van Djik

- 6812** NONLINEAR VISCOELASTIC CHARACTERIZATION OF POLYMERIC FOAMS
Szabolcs Berezvai, Attila Kossa

- 11102** A CHEMO-THERMO-MECHANICAL PHASE-FIELD MODEL FOR THE SOLIDIFICATION AND CURING OF FRPs
Felix Schwab, Daniel Schneider, Oleg Tschukin, Michael Selzer, Britta Nestler

Monday, June 6

Room 10

16:30-18:30

MS 505 - 2: INTERACTIVE SIMULATIONS IN COMPUTATIONAL ENGINEERING

MS Organizers: Adrian Harwood, Petra Wenisch

Chair: Petra Wenisch

- 8065** 3D OBJECT CAPTURE PIPELINE BASED ON MICROSOFT KINECT FOR INTERACTIVE FLOW SIMULATION
Adrian Harwood, Alistair Revell

DAY 1 – MONDAY, JUNE 6

<p>7269 AUTOMATIC VISUALIZATION AND CONTROL OF ARBITRARY NUMERICAL SIMULATIONS <i>Jan P. Springer, Helen Wright</i></p> <p>8053 PARALLELISATION OF ANDROID-BASED MOBILE PLATFORMS FOR REAL-TIME ENGINEERING SIMULATION <i>Adrian Harwood, Alistair Revell</i></p> <p>8685 GPU-BASED INTERACTIVE TOPOLOGY OPTIMIZATION <i>Stefan Gavranovic, Hans-Joachim Bungartz, Utz Wever, Dirk Hartmann</i></p>	<p>16:30-18:30</p> <p>CS 930 - 2: HIGH-ORDER DISCRETIZATION METHODS <i>Chair:</i> Antonio Pascau</p> <p>5955 DISCONTINUOUS GALERKIN SPECTRAL ELEMENT METHOD AND ENATE APPROACH COMPARISON IN 2D TRANSPORT EQUATIONS. <i>Antonio Pascau, Muslum Arici, Victor Llorente</i></p> <p>8771 ON THE STABILITY AND ACCURACY OF FLUX RECONSTRUCTION SCHEMES FOR IMPLICIT LARGE EDDY SIMULATION OF TURBULENT FLOWS <i>Brian Vermeire, Peter Vincent</i></p> <p>8146 A HIGH-ORDER DISCONTINUOUS GALERKIN METHOD FOR UNSTEADY ADVECTION-DIFFUSION PROBLEMS <i>Raunak Borker, Charbel Farhat, Radek Tezaur</i></p> <p>10081 SPATIALLY WEIGHTED PROJECTIONS FOR DISCONTINUITIES TREATMENT ADAPTED TO COMPACT HIGH-ORDER SCHEMES <i>Raphaël Lamouroux, Jérémie Gressier, Gilles Grondin</i></p> <p>10822 ON THE VERIFICATION OF HIGH-ORDER CFD SOLVERS <i>Farshad Navah, Siva Nadarajah</i></p>
<p>Monday, June 6 Room 11 16:30-18:30</p> <p>MS 916 - 2: DIRECT METHODS FOR LIMIT STATES OF MATERIALS AND STRUCTURES <i>MS Organizers:</i> Konstantinos V. Spiliopoulos, Dieter Weichert <i>Chair:</i> Konstantinos V. Spiliopoulos</p> <p>9835 A NUMERICAL STUDY ON THE ENDURANCE LIMIT OF PARTICULATE REINFORCED METAL MATRIX COMPOSITES (PRMMCS) USING THE DIRECT METHOD AND THE STATISTICAL LEARNING <i>Geng Chen, Bezahl Alexander, Christoph Broeckmann, Dieter Weichert</i></p> <p>11106 SHAKEDOWN ANALYSIS OF PLATE BENDING UNDER STOCHASTIC UNCERTAINTY BY CHANCE CONSTRAINED PROGRAMMING <i>Ngoc Trinh Tran, Thanh Ngoc Tran, H.G. Matthies, G.E. Stavroulakis, M. Staat</i></p> <p>11930 LIMIT ANALYSIS LOCUS OF HIGH STRENGTH STEEL PLATES UNDER NON-QUADRATIC YIELD CRITERIA <i>Konstantinos Nikolaou, Christos Bisbos</i></p> <p>7988 ON SHAKEDOWN OF ELASTIC-PLASTIC BODIES WITH TEMPERATURE-DEPENDENT PROPERTIES <i>Michael Peigney</i></p> <p>5621 LIMIT ANALYSIS OF STRUCTURES MADE OF NONLOCAL MATERIALS <i>Aurora Angela Pisano, Paolo Fuschi</i></p>	<p>Monday, June 6 Room 17 16:30-18:30</p> <p>CS 1020 - 2: EVOLUTIONARY AND DETERMINISTIC METHODS FOR DESIGN, OPTIMIZATION AND CONTROL <i>Chair:</i> Alexander Zuyev</p> <p>8264 OPTIMAL CONTROL OF A CHEMICAL REACTOR BY USING PERIODIC BANG-BANG INPUTS: ISOPERIMETRIC PROBLEM <i>Peter Benner, Andreas Seidel-Morgenstern, Alexander Zuyev</i></p> <p>11676 ON STRUCTURAL OPTIMIZATION WITH CATEGORICAL VARIABLES USING EVOLUTIONARY ALGORITHMS <i>Huanhuan Gao, Piotr Breitkopf, Rajan F. Coelho, Manyu Xiao</i></p> <p>4845 EVALUATION OF DIFFERENT APPROACHES FOR THE OPTIMIZATION OF LAYOUT AND CONTROL OF BOOSTER STATIONS <i>Philipp Pöttgen, Peter F. Pelz</i></p> <p>6920 COMPUTING AN OPERATING STRATEGY FOR AN ACTIVE BODY CONTROL WITH DYNAMIC PROGRAMMING IN THE AUTOMOTIVE AREA <i>Marlene Utz, Philipp Hedrich, Peter F. Pelz</i></p> <p>8717 A COMPARISON OF MILP AND MINLP SOLVER PERFORMANCE ON THE EXAMPLE OF A DRINKING WATER SUPPLY SYSTEM DESIGN PROBLEM <i>Lea Rausch, Philipp Leise, Thorsten Ederer, Lena C. Altherr, Peter F. Pelz</i></p>
<p>Monday, June 6 Room 12 16:30-18:30</p> <p>MS 917 - 2: MESOSCOPIC METHODS FOR COMPLEX FLUIDS AND SOFT MATTER <i>MS Organizers:</i> Zhen Li, Wenxiao Pan, Igor V. Pivkin <i>Chair:</i> Igor V. Pivkin</p> <p>6854 MOVEMENT OF LIQUID DROPLETS CONTAINING POLYMERS ON SUBSTRATE <i>Heng Wang, Guohui Hu</i></p> <p>8812 MODELING MECHANICS OF STIMULI-SENSITIVE HYDROGELS USING DISSIPATIVE PARTICLE DYNAMICS <i>Svetoslav Nikolov, Alexander Alexeev</i></p> <p>8241 SMOOTHED DISSIPATIVE PARTICLE DYNAMICS WITH ANGULAR MOMENTUM CONSERVATION <i>Kathrin Mueller, Davod Alizadehrad, Gerhard Gompper, Dmitry Fedosov</i></p> <p>9642 MULTI-SCALE COARSE-GRAINING FOR CONDENSED PHASE MATERIALS <i>Zhen Cao</i></p>	<p>Monday, June 6 Room 18 16:30-18:30</p> <p>CS 751 - 2: SMART MATERIALS AND STRUCTURES <i>Chair:</i> Javier Pereiro Barceló</p> <p>8115 VERY HIGH PERFORMANCE CONCRETE TO DELAY STEEL REINFORCEMENTS BUCKLING <i>Javier Pereiro Barceló, José Luis Bonet Senach</i></p> <p>8119 CONSTITUTIVE MODEL OF SMA REINFORCEMENTS UNDER BUCKLING <i>Javier Pereiro Barceló, José Luis Bonet Senach, José Ramón Albiol Ibañez</i></p> <p>8613 TOWARDS REAL-TIME STRUCTURAL HEALTH MONITORING DAMAGE DETECTION WITHOUT USER INPUT</p>
<p>Monday, June 6 Room 15</p>	

DAY 1 – MONDAY, JUNE 6

Mohmmad Salmanpour, Zahra Sharif Khodaei, Ferri Aliabadi

- 9382** FIBROUS TECTONICS:A RETHINKING OF COMPOSITE PRODUCTION THROUGH INNOVATION AND EXPLORATION OF MOLDING TECHNIQUES AND METHODOLOGIES
David Costanza

Monday, June 6 Room 21
16:30-18:30

CS 1010 - 2: COMPUTATIONAL INVERSE PROBLEMS AND OPTIMIZATION

Chair: Christian T. Jacobs

- 4610** ON THE VALIDITY OF TIDAL TURBINE ARRAY CONFIGURATIONS OBTAINED FROM STEADY-STATE ADJOINT OPTIMISATION
Christian T. Jacobs, Matthew D. Piggott, Stephan C. Kramer, Simon W. Funke
- 5279** DEVELOPMENT OF ACCURATE PNEUMATIC TYRE FINITE ELEMENT MODELS BASED ON AN OPTIMISATION PROCEDURE
Chrysostomos-Alexandros Bekakos, George Papazafeiropoulos, Dan J. O'Boy, Jan Prins
- 8138** GRADIENT-BASED OPTIMIZATION OF PARAMETERIZED CAD GEOMETRIES
Timothée Leblond, Pierre Froment, Paul de Nazelle, Philippe Serré, Reda Sellakh, Gaël Chevallier
- 8764** A COMPUTATIONAL STRATEGY FOR TRAJECTORY OPTIMIZATION OF UNDERACTUATED MULTIBODY SYSTEMS WITH CONTACTS
Silvia Manara, Alessio Artoni, Marco Gabiccini
- 7293** OPTIMAL CONTROL OF PLANAR GEOMETRICALLY EXACT BEAM NETWORKS
Christoph Strohmeyer

Monday, June 6 Room 22
16:30-18:30

MS 902 - 2: INNOVATIVE NUMERICAL APPROACHES FOR MULTI-PHYSICS PROBLEMS

MS Organizers: Anna Pandolfi, Laurent Stainier, Kerstin Weinberg

Chair: Kerstin Weinberg

- 8442** A POROUS BRITTLE DAMAGE MATERIAL MODEL
Anna Pandolfi, Gabriele Della Vecchia, Maria Laura De Bellis, Michael Ortiz
- 10956** ON THE STABILITY OF THE ELECTRODE INTERFACE DURING CHARGING IN LITHIUM BATTERIES
Kerstin Weinberg, Panagiotis Natsiavas, Michael Ortiz
- 9784** VARIATIONAL MESH ADAPTION FOR THERMO-MECHANICAL PROBLEMS
Rohit Pethe, Thomas Heuze, Laurent Stainier
- 6834** AN XFIELD METHOD FOR CRACK PROPAGATION IN BRITTLE ELASTIC MATERIALS
Luca Formaggia, Bianca Giovanardi, Anna Scotti
- 12303** REACTION FRONT PROPAGATION MODELING IN HETEROGENEOUS CONDENSED SYSTEMS
Alberto Cuitino, Yuriy Gulak
- 9266** A NOVEL STABILITY CONDITION FOR THE FE DISCRETISATION OF POREOELASTICITY MODEL
Marco Favino, Rolf Krause

Monday, June 6 Room 23
16:30-18:50

MS 913 - 2: HIGH-ORDER METHODS FOR POLYGONAL AND POLYHEDRAL MESHES

MS Organizers: Lourenço Beirao da Veiga, Franco Brezzi, Donatella Marini, Alessandro Russo

Chair: Donatella Marini

- 6277** VIRTUAL ELEMENTS FOR THE STOKES PROBLEM
Lourenço Beirao da Veiga, Carlo Lovadina, Giuseppe Vacca
- 4624** ADAPTIVE BEM-BASED FEM ON POLYGONAL MESHES FROM VIRTUAL ELEMENT METHODS
Steffen Weißer
- 7316** THE VIRTUAL ELEMENT METHOD FOR LARGE DEFORMATION CONTACT
P. Wriggers, W. T. Rust, B. D. Reddy
- 7979** DISCONTINUOUS GALERKIN METHODS FOR THE ELASTODYNAMICS EQUATION ON POLYGONAL AND POLYHEDRAL MESHES
Paola F. Antonietti, Ilario Mazzieri, Antonio Nicolò'
- 8592** A STABLE VIRTUAL ELEMENT METHOD FOR THE DARCY EQUATIONS AND THE BRINKMAN EQUATIONS
Lourenco Beirao da Veiga, Carlo Lovadina, Giuseppe Vacca
- 8706** BASIC PRINCIPLES OF HP VIRTUAL ELEMENT METHODS
Lourenço Beirao da Veiga, Alexey Chernov, Lorenzo Mascotto, Alessandro Russo
- 6797** A NON-CONFORMING VIRTUAL ELEMENT METHOD FOR STOKES EQUATIONS
Andrea Cangiani, Vitaliy Gyrya, Gianmarco Manzini

TECHNICAL SESSIONS

Tuesday, June 7 8:30-10:30	Zeus East	Tuesday, June 7 8:30-10:30	Zeus North
MS 913 - 3: HIGH-ORDER METHODS FOR POLYGONAL AND POLYHEDRAL MESHES <i>MS Organizers:</i> Lourenço Beirao da Veiga, Franco Brezzi, Donatella Marini, Alessandro Russo <i>Chair:</i> Lourenço Beirao da Veiga	9048 KEYNOTE: SERENDIPITY H(DIV) AND H(CURL) CONFORMING VEMS <i>Lourenco Beirao da Veiga, Franco Brezzi, Donatella Marini, Alessandro Russo</i>	MS 906 - 3: MATHEMATICAL ADVANCES IN ISOGEOMETRIC ANALYSIS <i>MS Organizers:</i> Annalisa Buffa, John A. Evans, Thomas J.R. Hughes, Giancarlo Sangalli <i>Chair:</i> John A. Evans	11253 KEYNOTE: HIGH ORDER EXPLICIT STRUCTURAL DYNAMICS WITH ISOGEOMETRIC COLLOCATION <i>Rene Hiemstra, Thomas JR Hughes, Alessandro Reali</i>
6334 THE VIRTUAL ELEMENT METHOD FOR DISCRETE FRACTURE NETWORK FLOW AND TRANSPORT SIMULATIONS <i>Matias Fernando Benedetto, Stefano Berrone, Andrea Borio, Sandra Pieraccini, Stefano Scialo, Fabio Vicini</i>	9319 A VIRTUAL ELEMENT METHOD FOR THE ACOUSTIC VIBRATION PROBLEM <i>Lourenco Beirao da Veiga, David Mora, Gonzalo Rivera, Rodolfo Rodriguez</i>	6751 COMPUTATIONAL COMPARISON OF ADAPTIVE MESH REFINEMENT STRATEGIES IN ISOGEOMETRIC ANALYSIS <i>Paul Hennig, Markus Kästner, Philipp Morgenstern, Daniel Peterseim</i>	11330 MANIFOLD-BASED THIN-SHELLS FINITE ELEMENTS OF ARBITRARY ORDER AND SMOOTHNESS <i>Musabbir Majeed, Fehmi Cirak</i>
6815 A VIRTUAL ELEMENT METHOD FOR STRUCTURAL MECHANICS PROBLEMS <i>Lourenco Beirao da Veiga, Carlo Lovadina, David Mora</i>	9535 A NEW VIRTUAL ELEMENT METHOD FOR 2D NONLINEAR INELASTIC APPLICATIONS <i>Edoardo Artioli, Lourenco Beirao da Veiga, Carlo Lovadina, Elio Sacco</i>	4488 ADAPTIVE INTEGRATION FOR ISOGEOMETRIC BOUNDARY ELEMENT ANALYSIS THROUGH NESTED CLENSHAW CURTIS QUADRATURE <i>Robert Simpson, Zhaowei Liu</i>	
Tuesday, June 7 8:30-10:30	Zeus West	Tuesday, June 7 8:30-10:30	Minos East
MS 609 - 3: ADVANCED COMPUTATIONAL MODELING OF BATTERIES AND FUEL CELLS <i>MS Organizers:</i> Edwin Knobbe, Wolfgang A. Wall <i>Chair:</i> Edwin Knobbe	5448 PPGDA/LIPF6 SOLID ELECTROLYTE ELECTROCHEMICAL AND MECHANICAL PROPERTIES AT GRAPHITIC INTERFACE <i>Osvalds Verners, Barend Thijssse, Angelo Simone</i>	MS 501 - 3: ALGORITHMIC ASPECTS OF HIGH-PERFORMANCE COMPUTING FOR MECHANICS AND PHYSICS <i>MS Organizers:</i> Santiago Badia, Victor Calo, Javier Principe <i>Chair:</i> Javier Principe	7789 INITIALIZATION OF PHASE-FIELD FRACTURE PROPAGATION IN POROUS MEDIA USING A PROBABILITY MAP OF FRACTURE NETWORK <i>Mary Wheeler</i>
9900 A THREE-DIMENSIONAL, THERMODYNAMIC, COUPLED MODEL FOR FULLY RESOLVED FINITE ELEMENT SIMULATIONS OF LITHIUM-ION BATTERIES <i>Rui Fang, Wolfgang A. Wall</i>	7160 MODELING OF NIXMNYCO1-X-Y (NMC) CATHODES OF HIGH-ENERGY AND HIGH-POWER CELLS WITH A TRANSMISSION LINE MODEL <i>Janina Costard, Moses Ender, Michael Weiss, Ellen Ivers-Tiffée</i>	6770 EVALUATION OF THE PERFORMANCE OF SMOOTHERS FOR FULLY-COUPLED ALGEBRAIC MULTIGRID PRECONDITIONERS FOR IMPLICIT VARIATIONAL MULTISCALE FINITE ELEMENT RESISTIVE MAGNETOHYDRODYNAMICS <i>Paul Lin, John Shadid</i>	9123 STRONGLY PARALLEL METHODS FOR NUMERICAL SIMULATION IN NONLINEAR STRUCTURAL MECHANICS <i>Camille Negrello, Pierre Gosselet, Christian Rey</i>
8389 EFFECT OF MICROSTRUCTURE ON THERMAL CONDUCTIVITY OF LITHIUM-ION ELECTRODES VIA DEM SIMULATIONS <i>Clara Sangrós Giménez, Arno Kwade</i>	9100 MODELING OF LIFEPO4-ELECTRODES <i>Wolfgang Dreyer, Clemens Guhle, Manuel Landstorfer, Mario Maurelli, Rüdiger Müller, Paul Gajewski</i>	9285 A NON-INTRUSIVE MULTI-SCALE STRATEGY FOR A MIXED DOMAIN DECOMPOSITION METHOD FOR CONTACT PROBLEMS <i>Paul Oumaziz, Pierre Gosselet, Pierre-Alain Boucard</i>	4478 PSEUDOMULTIGRID GAUSS–SEIDEL METHOD FOR LARGE SCALE AND HIGH PERFORMANCE COMPUTING <i>Sergey Martynenko, Vadim Volokhov, Pavel Toktaliev</i>
		6541 PARALLELIZABLE EXPLICIT LOCAL TIME STEPPING FOR DISCONTINUOUS GALERKIN APPROXIMATIONS ON MOVING MESHES <i>Andrew Winters</i>	

DAY 2 – TUESDAY, JUNE 7

<p>Tuesday, June 7 8:30-10:30</p> <p>MS 301 - 1: METHODS FOR CUT AND COMPOSITE MESHES: THEORY, ALGORITHMS AND APPLICATIONS</p> <p><i>MS Organizers:</i> Mats G. Larson, André Massing <i>Chair:</i> André Massing</p> <p>5714 AN OPTIMIZATION-BASED APPROACH TO MESH TYING AND TRANSMISSION PROBLEMS <i>Paul Kuberry, Pavel Bochev</i></p> <p>7469 CONFORMAL HIGH-ORDER DISCRETIZATIONS FOR MULTIPHASE FLOW: CHOICE OF BASIS, PRECONDITIONING AND TEMPORAL DISCRETIZATION <i>Florian Kummer</i></p> <p>8261 A SPACE-TIME CUT FINITE ELEMENT METHOD FOR CONVECTION-DIFFUSION PROBLEMS ON TIME DEPENDENT DOMAINS <i>Peter Hansbo, Mats G. Larson, Sara Zahedi</i></p> <p>4573 REMOVING THE STABILIZATION PARAMETER IN FITTED AND UNFITTED SYMMETRIC NITSCHE FORMULATIONS <i>Christoph Lehrenfeld, Arnold Reusken</i></p> <p>6043 INTERNODES (INTERPOLATION FOR NON-CONFORMING DECOMPOSITIONS): AN ACCURATE APPROACH FOR THE NUMERICAL SOLUTION OF PDES ON NONCONFORMING DISCRETIZATIONS <i>Simone Deparis, Davide Forti, Paola Gervasio, Alfio Quarteroni</i></p> <p>8362 IMMERSOGEOMETRIC FLUID FLOW ANALYSIS AND DESIGN OPTIMIZATION USING B-REP CAD MODELS <i>Ming-Chen Hsu, Chenglong Wang, Fei Xu, Michael C.H. Wu, Adarsh Krishnamurthy</i></p>	<p>Minos North</p>	<p>Tuesday, June 7 8:30-10:30</p> <p>MS 1001 - 2: STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION</p> <p><i>MS Organizers:</i> J.F. Aguilar Madeira, Helder C. Rodrigues <i>Chair:</i> Erik Lund</p> <p>8892 TOPOLOGY OPTIMIZATION OF CONTACT PROBLEMS BASED ON ALLEN CAHN APPROACH <i>Andrzej Myslinski</i></p> <p>11024 TOPOLOGY OPTIMIZATION OF WAVE BARRIERS FOR RAILWAY INDUCED VIBRATIONS IN BUILDINGS <i>Cédric Van hoorickx, Mattias Schevenels, Geert Lombaert</i></p> <p>11861 TOPOLOGY OPTIMIZATION ON TRANSIENT HEAT TRANSFER PROBLEMS <i>Said Zeidan</i></p> <p>8471 TOPOLOGY OPTIMIZATION USING A KRIGING-ASSISTED GENETIC ALGORITHM WITH A NOVEL LEVEL SET REPRESENTATION APPROACH <i>Mitsuo Yoshimura, Koji Shimoyama, Takashi Misaka, Shigeru Obayashi</i></p> <p>9574 ON THE OPTIMAL DESIGN OF CABLE-STAYED BRIDGES <i>Gerardo Carpentieri, Mariano Modano, Francesco Fabbrocino, Luciano Feo, Fernando Fraternali</i></p>	<p>Danae</p>
<p>Tuesday, June 7 8:30-10:30</p> <p>MS 503 - 3: HPC-BASED SIMULATIONS FOR THE ENGINEERING REALM AND INDUSTRIAL APPLICATIONS</p> <p><i>MS Organizers:</i> Makoto Tsubokura, Mariano Vázquez, Takayuki Aoki <i>Chair:</i> Cristóbal Samaniego</p> <p>10235 NUMERICAL ANALYSIS OF RADIO FREQUENCY BLACKOUT FOR ATMOSPHERIC REENTRY VEHICLE USING CFD-CEM COMBINED METHOD <i>Yusuke Takahashi, Reo Nakasato, Nobuyuki Oshima</i></p> <p>10763 SCALE DOWN OF A PRODUCTION (INDUSTRIAL) SCALE TABLET COATING PROCESS USING THE DISCRETE ELEMENT METHOD <i>Peter Böhling, Matthew Metzger, Brendon Ricart, Pavol Rajniak, Johannes Khinast</i></p> <p>10923 VALIDATION OF WALL-MODELED LES FOR HIGH REYNOLDS NUMBER FLOW <i>Ken Uzawa, Kenji Ono</i></p> <p>11146 DIRECT FEM LARGE SCALE COMPUTATION OF TURBULENT MULTIPHASE FLOW IN URBAN WATER SYSTEMS AND MARINE ENERGY <i>Ezhilmathi Krishnasamy, Johan Hoffman, Johan Jansson</i></p> <p>7928 LARGE-SCALE SIMULATIONS FOR FLUIDIZATION USING COUPLED LATTICE BOLTZMANN METHOD AND DISCRETE ELEMENT METHOD ON A GPU SUPERCOMPUTER <i>Seiya Watanabe, Takayuki Aoki, Yuta Hasegawa</i></p>	<p>Minos South</p>	<p>Tuesday, June 7 8:30-10:30</p> <p>CS 410 - 1: COMPUTATIONAL FLUID MECHANICS</p> <p><i>Chair:</i> Marcela Cruchaga</p> <p>8221 NUMERICAL SIMULATION OF FLOWS INCLUDING RIGID BODIES WITH IMPOSED MOTION <i>Felipe González, Marcela Cruchaga, Diego Celentano</i></p> <p>8621 NUMERICAL OPTIMISATION OF THE SUPERSONIC FLOW ACTING ON A CYLINDER IN A NOZZLE <i>Akil Osman, Joris Degroote, Jan Vierendeels</i></p> <p>10249 AN EXPERIMENTAL AND NUMERICAL STUDY ON THE PERFORMANCE OF AN INNOVATIVE VERTICAL-AXIS WIND TURBINE <i>Katarzyna Kludzinska, Krzysztof Tesch, Piotr Doerffer</i></p> <p>8825 VALIDATION OF A CFD MODEL WITH LIDAR-BASED WIND SCANNERS UPSTREAM OF A WIND TURBINE IN COMPLEX TERRAIN <i>Alexander R. Meyer Forsting, Niels Troldborg, Andreas Bechmann, Nikolas Angelou, Nikola Vasilevic</i></p> <p>5207 HEAT RECOVERY BY CROSS FLOW <i>Karel Adamek, Jan Kolar, Pavel Peukert</i></p> <p>12025 APPLICATION OF BAY MODEL OF AIR-JER VORTEX GENERATOR IN TRANSONIC FLOW OVER V2C WING <i>Tomasz Kwiatkowski, Paweł Flaszynski</i></p>	<p>Europa</p>

DAY 2 – TUESDAY, JUNE 7

<p>Tuesday, June 7 8:30-10:30</p> <p>MS 1101 - 3: REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES</p> <p><i>MS Organizers:</i> Francisco Chinesta, Elias Cueto, Antonio Huerta, Pierre Ladeveze, Gianluigi Rozza <i>Chair:</i> Francisco Chinesta</p> <p>5948 ADAPTIVE SIMULTANEOUS ADJUSTMENT OF POD AND DEIM BASIS <i>Fabian Fritz, Lihong Feng, Michael Mangold, Peter Benner</i></p> <p>10431 AN APPROACH TO PREDICT GUST EFFECTS BY MEANS OF HYBRID ROM/CFD SIMULATIONS <i>Michel Bergmann, Andrea Ferrero, Angelo Iollo, Haysam Telib</i></p> <p>11860 A PGD-BASED TIME SPACE DECOMPOSITION FOR THE UNSTEADY NAVIER-STOKES EQUATIONS APPLIED TO INCOMPRESSIBLE FLOWS <i>Michel Visonneau</i></p> <p>7753 OPTIMAL LOCAL APPROXIMATION SPACES FOR COMPONENT-BASED STATIC CONDENSATION PROCEDURES <i>Kathrin Smetana, Anthony T Patera</i></p> <p>10145 SEISMIC STRUCTURAL PROBLEMS: DAMAGE PREDICTION AND ITS VARIABILITY THROUGH PGD MODELS <i>Matthieu Vitse, David Néron, Pierre-Alain Boucard</i></p>	<p>Leda</p>	<p>Tuesday, June 7 8:30-10:30</p> <p>MS 903 - 3: ADVANCES IN FICTITIOUS DOMAIN METHODS FOR SOLID MECHANICS</p> <p><i>MS Organizers:</i> Alexander Dürster, Ernst Rank, Stefan Kollmannsberger, Andreas Schröder <i>Chair:</i> Stefan Kollmannsberger</p> <p>11518 HIGHER-ORDER MULTI-RESOLUTION TOPOLOGY OPTIMIZATION USING THE FINITE CELL METHOD <i>Jeroen Groen, Martin Ruess, Matthijs Langelaar, Ole Sigmund</i></p> <p>6108 AUTOMATIC CONFORMAL DECOMPOSITION OF ELEMENTS CUT BY NURBS <i>Jakob W. Steidl, Thomas-Peter Fries</i></p> <p>4659 TOWARDS LATTICE-BOLTZMANN ON DYNAMICALLY ADAPTIVE GRIDS — MINIMALLY-INVASIVE GRID EXCHANGE IN ESPRESSO <i>Michael Lahner, Carsten Burstedde, Christian Holm, Miriam Mehl, Georg Rempfer, Florian Weik</i></p> <p>8920 A DESIGN-THROUGH-ANALYSIS APPROACH USING THE FINITE CELL METHOD <i>Benjamin Wassermann, Tino Bog, Stefan Kollmannsberger, Ernst Rank</i></p>	<p>Artemis</p>
<p>Tuesday, June 7 8:30-10:30</p> <p>Athena</p> <p>MS 703 - 1: COMPUTATIONAL MECHANICS OF WOOD MATERIALS AND TIMBER STRUCTURES</p> <p><i>MS Organizers:</i> Josef Füßl, Josef Eberhardsteiner, Erik Serrano, Michael Kaliske <i>Chair:</i> Josef Füßl</p> <p>10674 FRACTURE NUCLEATION AND CONTINUED CRACK GROWTH ON THE CELL SCALE IN WOOD ANALYZED BY A HIGH-RESOLUTION FINITE ELEMENT MODEL <i>Jenny Carlsson, Per Isaksson</i></p> <p>9072 A COMBINED COMPUTATIONAL AND EXPERIMENTAL X-RAY CT MULTISCALE STUDY OF STABLE, SLOWLY GROWING CRACKS IN WOOD-FIBRE BASED COMPOSITE MATERIALS <i>Thomas Joffre, Kristoffer Segerholm, Cecilia Persson, Stig L. Bardage, Cris L. Luengo Hendriks, Per Isaksson</i></p> <p>10600 A NUMERICAL LIMIT ANALYSIS APPROACH FOR STRENGTH PREDICTIONS OF CLEAR WOOD TAKING MICROSTRUCTURAL CHARACTERISTICS INTO ACCOUNT <i>Mingjing Li, Josef Füßl, Markus Lukacevic, Josef Eberhardsteiner, Chris Martin</i></p> <p>5303 A CONTINUUM MICROMECHANICS APPROACH TO THE ELASTICITY OF PLANAR FIBER NETWORKS AND ITS APPLICATIONS TO PAPER MATERIALS <i>Pedro Miguel J. S. Godinho, Leopold Wagner, Viktoria Vass, Josef Eberhardsteiner, Christian Hellmich</i></p> <p>5480 APPLICATION OF A NOVEL FINITE ELEMENT METHOD-BASED MODEL TO EVALUATE FLEXURAL PROPERTIES OF ORIENTED STRAND BOARDS <i>Hsien-Tsung Hu, Feng-Cheng Chang</i></p>	<p>Athena</p>	<p>Tuesday, June 7 8:30-10:30</p> <p>MS 921 - 3: RECENT ADVANCES IN BOUNDARY ELEMENT METHODS</p> <p><i>MS Organizers:</i> Gernot Beer, Luiz Wrobel, Martin Schan <i>Chair:</i> Gernot Beer</p> <p>6472 GREEN'S FUNCTION FOR THE EVALUATION OF ANCHOR LOSSES IN MEMS <i>Attilio Frangi, Massimiliano Cremonesi</i></p> <p>9175 NUMERICAL SIMULATION OF 3D HEAT CONDUCTION IN LAYERED MEDIA CONTAINING EMBEDDED CRACKS <i>António Tadeu, Catarina Serra, Nuno Simões</i></p> <p>7181 NUMERICAL SIMULATION OF GROUNDING GRIDS FOR UNDERGROUND ELECTRICAL SUBSTATIONS <i>Raquel Guizán, José París, Ignasi Colominas, Fermín Navarrina, Manuel Castelheiro</i></p> <p>7178 EFFICIENT BOUNDARY ELEMENT FORMULATION OF THERMOELASTICITY <i>Relindis Rott, Martin Schanz</i></p> <p>10989 BOUNDARY ELEMENT SIMULATION OF STRESS-STRAIN STATE AND VOLUMETRIC DAMAGEABILITY OF MULTIBODY TRIBOFATIGUE SYSTEM <i>Michael Zhuravkov, Sergei Sherbakov, Leonid Sosnovskiy</i></p> <p>9004 A MICROSTRUCTURAL ANALYSIS OF A DUCTILE CAST IRON GGG40 USING BEM <i>Adrián Betancur, Carla Anflor</i></p>	<p>Aphrodite</p>

DAY 2 – TUESDAY, JUNE 7

<p>Tuesday, June 7 8:30-10:30</p> <p>MS 806 - 1: MULTISCALE MODELLING OF MATERIALS AND STRUCTURES MS Organizers: Tadeusz Burczyński, Xavier Oliver, Maciej Pietrzyk, Alfredo Huespe Chair: Tadeusz Burczyński</p> <p>7214 KEYNOTE: EFFECTIVE MESO AND MACRO PROPERTIES FOR FIBRE-REINFORCED-POLYMER CURING COUPLED TO VISCO-ELASTICITY <i>Rolf Mähnken, Christian Dammann</i></p> <p>6696 CRACK PATH FIELD AND STRAIN INJECTION TECHNIQUES IN DYNAMIC FRACTURE SIMULATIONS <i>Oriol Lloberas-Valls, Alfredo E. Huespe, Javier Oliver, Ivo F. Dias</i></p> <p>4728 THE KIRKENDALL SHIFT AND FRENKEL EFFECT DURING MULTI-COMPONENT DIFFUSION PROCESS <i>Bartek Wierzbka</i></p> <p>11260 COMPUTATIONAL MATERIAL DESIGN FOR ACOUSTIC CLOAKING <i>Carlos Méndez, Alfredo Huespe, Juan Manuel Podestá, Xavier Oliver</i></p> <p>10707 MODELING OF PHASE CHANGES IN MICRO-DOMAIN INDUCED BY AN ULTRASHORT LASER PULSE <i>Ewa Majchrzak, Lukasz Turchan, Jolanta Dziatkiewicz</i></p>	<p>Antigoni</p>	<p>Tuesday, June 7 8:30-10:30</p> <p>MS 919 - 1: RECENT ADVANCES IN NUMERICAL SIMULATION AND ANALYSIS OF KINETIC MODELS MS Organizers: E. Harald van Brummelen, Manuel Torrilhon Chair: E. Harald van Brummelen</p> <p>11336 NUMERICAL METHODS FOR MOMENT EQUATIONS ON COMPLEX GEOMETRIES <i>Manuel Torrilhon</i></p> <p>5052 DETERMINISTIC AND STOCHASTIC MICRO-MACRO METHODS FOR KINETIC EQUATIONS <i>Giovanni Samaey</i></p> <p>8305 AN IMPROVED FOURTEEN-MOMENT MODEL FOR RAREFIED-GAS AND MULTIPHASE-FLOW PREDICTION <i>James McDonald, Zakaria Ben Dhia</i></p> <p>9530 DISCRETE VELOCITY MODELS: A STUDY OF THE HYDRODYNAMIC LIMIT <i>Hans Babovsky</i></p> <p>8397 MOMENT CLOSURE APPROXIMATIONS OF THE BOLTZMANN EQUATION BASED ON PHI-DIVERGENCES <i>Michael Abdelmalik, Harald van Brummelen</i></p>	<p>Apollo West</p>
<p>Tuesday, June 7 8:30-10:50</p> <p>MS 106 - 1: DIRECT AND INVERSE METHODS FOR CARDIOVASCULAR AND PULMONARY BIOMECHANICS MS Organizers: Wolfgang A. Wall, C. Alberto Figueroa, Marek Behr Chair: Wolfgang A. Wall</p> <p>8593 KEYNOTE: STRATEGIES FOR CARDIOVASCULAR AND RESPIRATORY MULTISCALE MODELING PARAMETRIZATION <i>Irene Vignon-Clementel</i></p> <p>10895 HIGHER ORDER STABILIZED FINITE ELEMENT METHODS FOR CARDIOVASCULAR FLOW <i>Kenneth Jansen, Hyun Jin Kim</i></p> <p>5374 NUMERICAL SIMULATION OF STENT-GRAFT DEPLOYMENT IN PATIENT-SPECIFIC ABDOMINAL AORTIC ANEURYSM <i>André Hemmeler, Michael W. Gee</i></p> <p>6961 3D COMPUTATIONS OF MUCOCILIARY CLEARANCE <i>Robin Chatelin, Dominique Anne-Archaïd, Philippe Poncet</i></p> <p>8179 ESTIMATION OF DIASTOLIC AND SYSTOLIC MYOCARDIAL PROPERTIES USING PATIENT-SPECIFIC MODELS OF THE HUMAN HEART <i>Myrianthi Hadjicharalambous, Liya Asner, Radomir Chabiniok, Jack Lee, David Nordsletten</i></p> <p>9043 BLOOD FLOW IN THE COMMON CAROTID ARTERY WITH STENOSIS <i>Helena Henriques, Luisa Sousa, Catarina Castro, Carlos António, Rosa Santos, Pedro Castro, Elsa Azevedo</i></p>	<p>Apollo East</p>	<p>Tuesday, June 7 8:30-10:30</p> <p>MS 1202 - 1: ADVANCED BEAM MODELS MS Organizers: Dinar Camotim, Zuzana Dimitrovová, Rodrigo Gonçalves Chair: Dinar Camotim, Zuzana Dimitrovová</p> <p>11449 FIRST-ORDER DISPLACEMENT-BASED ZIGZAG THEORIES FOR COMPOSITE LAMINATES AND SANDWICH STRUCTURES: A REVIEW <i>Marco Di Sciuva</i></p> <p>5439 A COMPUTATIONALLY EFFECTIVE APPROACH TO FINITE ROTATIONS - SMALL STRAINS DESCRIPTION OF BEAM ELEMENTS <i>Salvatore Lopez</i></p> <p>9395 STATIC SOLUTION FOR THE VIBRATION FREQUENCIES OF AXIALLY LOADED BEAMS <i>Moshe Eisenberger</i></p> <p>9035 3D BEAM-COLUMN FINITE ELEMENT UNDER NON-UNIFORM SHEAR STRESS DISTRIBUTION DUE TO SHEAR AND TORSION <i>Paolo Di Re, Daniela Addessi, Filip C. Filippou</i></p> <p>9396 PHASE FIELD MODELING OF BRITTLE FRACTURE IN AN EULER-BERNOULLI BEAM <i>Jian Gao, Yihuan Li, Marino Arroyo, Yongxing Shen</i></p>	<p>Room 1</p>
<p>Tuesday, June 7 8:30-10:30</p> <p>CS 420 - 3: MULTI-PHASE AND CHEMICALLY REACTING FLOWS Chair: Aromal Vasavan</p> <p>12015 HIGHER ORDER CORRECTION OF PROGRESS VARIABLE SOURCE TERM IN FLAMELET GENERATED MANIFOLDS (FGM) APPROACH FOR MODELING STRAINED 1D COUNTERFLOW FLAMES <i>Aromal Vasavan, Philip de Goey, Jeroen van Oijen</i></p>	<p>Room 2</p>		

DAY 2 – TUESDAY, JUNE 7

6101	NUMERICAL SIMULATION OF HEAT AND MASS TRANSFER PROCESSES IN LARGE-SCALE FLUIDIZED BED COMPLEX STRUCTURE APPARATUS AS AN EXAMPLE OF THE REACTOR OF ISOPARAFFINS DEHYDROGENATION <i>Sergei Solovev, Svetlana Egorova, Alexander Lamberov, Olga Soloveva</i>	11188	INFLUENCE ON THE LIFETIME OF ROCKET ENGINE NOZZLE STRUCTURES <i>Marek Fassin, Stephan Wulffinghoff, Stefanie Reese</i>
7549	SHOCK CAPTURING COMPUTATIONS WITH STABILIZED POWELL-SABIN ELEMENTS <i>Giorgio Giorgiani, Herve Guillard, Boniface Nkonga</i>	11188	STRAIN SOFTENING INSTABILITIES AND NONLOCAL REGULARISATION METHODS IN FEM AND SPH <i>Rade Vignjevic, Nenad Djordjevic, Tom De Vuyst, Simone Gemkow, George Dulikravich</i>
9056	MULTIPHASE FLOW IN POROUS MEDIA USING CFD <i>Casper Schytte Hemmingsen, Jens Honore Walther</i>		
9387	LARGE EDDY SIMULATION OF TURBULENT COMPRESSIBLE FLOWS USING THE CHARACTERISTIC-BASED SPLIT SCHEME AND MESH ADAPTATION <i>Renato Linn, Armando Awruch</i>		

Tuesday, June 7	Room 3
8:30-10:30	

MS 306: LATTICE SPRING METHODS FOR LINEAR AND NONLINEAR CONTINUA

<i>MS Organizers:</i> Ioannis Doltsinis	
<i>Chair:</i> Ioannis Doltsinis, Vitor Dias da Silva	
7740	GENERATING TRIANGULAR LATTICES FOR SURFACES WITH IRREGULAR BOUNDARY <i>Tatiana Sá Marques, Vitor Dias da Silva</i>
6268	PROPERTIES OF NONLINEAR NORMAL SPRING LATTICES REGARDING STABILITY AND MECHANICAL BEHAVIOUR <i>Rafael D. Jarzabek</i>
6447	LATTICE SPRING MODELS IN TWO AND THREE DIMENSIONS FOR ARBITRARY MESHES <i>Michael Reck</i>
10948	WAVE TRANSMISSION THROUGH NONLINEAR IMPACTING METAMATERIAL UNIT <i>Arnab Banerjee, Raj Das, Emilio Calius</i>
16560	KEYNOTE: ARGYRI'S NATURAL APPROACH RELATED TO DEFORMABLE CONTINUA AND SPRING LATTICE MODELS <i>Ioannis Doltsinis</i>

Tuesday, June 7	Room 4
8:30-10:30	

CS 212 - 1: NUMERICAL MODELING OF DAMAGE, FAILURE AND FRACTURE

<i>Chair:</i> Yulia Pronina	
9674	NEW BENCHMARK FOR THE LIFE ASSESSMENT OF A THIN-WALLED PIPE SUBJECTED TO STRESS ASSISTED CORROSION <i>Yulia Pronina, Elena Sedova</i>
8157	RELIABILITY ANALYSIS IN FRACTURE MECHANICS ACCORDING TO COMBINED FAILURE CRITERIA <i>Rudy Chocat, Paul Beaucaire, Loïc Debeugny, Jean-Pierre Lefebvre, Caroline Sainvitu, Piotr Breitkopf, Eric Wyart</i>
9555	FORMULATION AND IMPLEMENTATION OF AN ORTHOTROPIC CONSTITUTIVE MODEL FOR COUPLED ELASTOPLASTIC-DAMAGE <i>Swaroop Gaddikere Nagaraja, Clara Schuecker</i>
5807	MODELING CREEP BEHAVIOR OF SEMICRYSTALLINE THERMOPLASTICS CONSIDERING CYCLIC UNLOADING <i>Patrick Zerbe, Benjamin Schneider, Michael Kaliske</i>
9961	MODELLING THERMAL BARRIER COATINGS AND THEIR
15540	KEYNOTE: SEISMIC PROTECTION OF MONUMENTS AND HISTORIC STRUCTURES – THE SEISMO RESEARCH PROJECT <i>Constantine Spyros, Charilaos Maniatakis</i>
11138	NATIVITY CHURCH IN BETHLEHEM: FULL 3D NON-LINEAR FE APPROACH FOR STRUCTURAL DAMAGE PREDICTION <i>Gabriele Milani, Marco Valente, Claudio Alessandri</i>
11134	SEISMIC ASSESSMENT OF HISTORICAL MASONRY TOWERS IN THE NORTH-EAST REGION OF ITALY <i>Marco Valente, Gabriele Milani</i>
11242	DYNAMIC BEHAVIOUR AND EARTHQUAKE PERFORMANCE OF GREEK BASILICA CHURCHES WITH FOUNDATION DEFORMABILITY <i>George Manos, Evangelos Kozikopoulos, Lambros Kotoulas</i>
11342	PROBLEMS RELATED TO THE USE OF FIBER REINFORCED CEMENTITIOUS MATERIALS AS STRENGTHENING OF MASONRY MEMBERS <i>Daniela Sinicropi, Antonio Borri, Marco Corradi, Michele Paradiso</i>

Tuesday, June 7	Room 5
8:30-10:30	

CS 460 - 1: UNSTEADY FLOW COMPUTATION

<i>Chair:</i> Arthur Veldman	
8136	FREE-SURFACE FLOW SIMULATIONS FOR MOORED AND FLOATING OFFSHORE PLATFORMS <i>Arthur Veldman, Roel Luppens, Peter van der Plas, Henri van der Heiden, Bulent Duz, Wybe Rozema, Henk Seubers, Joop Helder, Tim Bunnik, Rene Huijsmans</i>
5441	REDUCED ORDER MODELLING OF GUST ANALYSIS USING COMPUTATIONAL FLUID DYNAMICS <i>Reik Thormann, Philipp Bekemeyer, Sebastian Timme</i>
7604	PERFORMANCE AND WAKE DEVELOPMENT OF VERTICAL AXIS WIND TURBINES: A LES STUDY USING A VORTEX PARTICLE-MESH METHOD <i>Matthieu Duponcheel, Gregoire Winckelmans, Philippe Chatelain</i>
7541	INVESTIGATION OF A MODERN & HYBRID TURBULENCE MODELLING APPROACH FOR TRANSIENT AUTOMOTIVE AERODYNAMICS SIMULATIONS <i>Rene Devaradja, Petr Simanek, Jacques Papper, Pavla Policka</i>
9777	MODELLING OF UNSTEADY SECONDARY VORTICES GENERATED BEHIND THE RADIAL GAP OF THE AXIAL TURBINE BLADE WHEEL <i>Petr Straka</i>

Tuesday, June 7	Room 7
8:30-10:30	

MS 1214 - 1: HISTORIC MASONRY STRUCTURES: MODELLING, ASSESSMENT & RETROFIT

<i>MS Organizers:</i> Panagiotis Asteris, Charilaos Maniatakis, Constantine Spyros	
<i>Chair:</i> Constantine Spyros	
15540	KEYNOTE: SEISMIC PROTECTION OF MONUMENTS AND HISTORIC STRUCTURES – THE SEISMO RESEARCH PROJECT <i>Constantine Spyros, Charilaos Maniatakis</i>
11138	NATIVITY CHURCH IN BETHLEHEM: FULL 3D NON-LINEAR FE APPROACH FOR STRUCTURAL DAMAGE PREDICTION <i>Gabriele Milani, Marco Valente, Claudio Alessandri</i>
11134	SEISMIC ASSESSMENT OF HISTORICAL MASONRY TOWERS IN THE NORTH-EAST REGION OF ITALY <i>Marco Valente, Gabriele Milani</i>
11242	DYNAMIC BEHAVIOUR AND EARTHQUAKE PERFORMANCE OF GREEK BASILICA CHURCHES WITH FOUNDATION DEFORMABILITY <i>George Manos, Evangelos Kozikopoulos, Lambros Kotoulas</i>
11342	PROBLEMS RELATED TO THE USE OF FIBER REINFORCED CEMENTITIOUS MATERIALS AS STRENGTHENING OF MASONRY MEMBERS <i>Daniela Sinicropi, Antonio Borri, Marco Corradi, Michele Paradiso</i>

DAY 2 – TUESDAY, JUNE 7

Tuesday, June 7 8:30-10:30	Room 8	Tuesday, June 7 8:30-10:30	Room 10
CS 110 - 3: NUMERICAL MODELS IN BIOMECHANICS <i>Chair:</i> Julia Mikhal		CS 1200 - 1: STRUCTURAL DYNAMICS <i>Chair:</i> Ali Abbas	
11174 RELIABILITY OF FLOW PREDICTIONS IN CEREBRAL ANEURYSMS <i>Julia Mikhal, Meindert de Groot, Bernard Geurts</i>	8455 FE MODELLING OF SFRC BEAMS UNDER IMPACT LOADS <i>Pegah Behinaein, Ali Abbas, Demetris Cotsovos</i>	6969 NONLINEAR FORCED RESPONSE OF A STATOR VANE WITH MULTIPLE FRICTION CONTACTS USING A COUPLED STATIC/DYNAMIC APPROACH <i>Marco Lassalle, Christian Maria Firrone</i>	
10867 CRIMSON: TOWARDS A SOFTWARE ENVIRONMENT FOR PATIENT-SPECIFIC BLOOD FLOW SIMULATION FOR DIAGNOSIS AND TREATMENT <i>Rostislav Khlebnikov, C. Alberto Figueroa</i>	10012 PASSIVE-ACTIVE MECHANICAL RESPONSE OF ARTERIAL WALLS UTILIZING ANISOTROPIC HIGH-ORDER FINITE ELEMENTS <i>Omid Sepahi, Lars Radtke, Sebastian Eike Debus, Alexander Düster</i>	10452 AN APPROXIMATE ANALYTICAL SOLUTION FOR NONLINEAR FGM SHELL STRUCTURE WITH VARIABLE IN TIME PARAMETERS <i>Victor Gristchak, Yuliia Fatiieva</i>	
11537 INFLUENCE OF ANESTHESIA, LOCOMOTOR ACTIVITY AND COMPUTATIONAL METHOD ON CALCULATED SHEAR STRESS PATTERNS IN THE CAROTID BIFURCATION OF MICE <i>David De Wilde, Bram Trachet, Guido De Meyer, Patrick Segers</i>	8651 A PRECONDITIONER FOR THE FINITE ELEMENT APPROXIMATION TO THE LINEAR VISCOELASTIC WAVE EQUATION <i>Maximilian Balmus, Ralph Sinkus, David Kay, David A. Nordsletten</i>	11458 MAGNETIC-STRUNG NES WITH ENERGY HARVESTING: THEORETICAL AND EXPERIMENTAL STUDY OF A NEW CONCEPT OF NONLINEAR VIBRATIONS ABSORBER. <i>Giuseppe Pennisi, Brian Mann, Cyrille Stephan, Guilhem Michon</i>	6753 STRUCTURAL DYNAMIC ANALYSIS OF OFFSHORE WIND TURBINES WITH JACKET FOUNDATIONS. <i>Iván Couceiro, José París, Fermín Navarrina, Ignasi Colominas, Manuel Castelero</i>
7920 SOLVING THE INVERSE PROBLEM OF ESTIMATING FUZZY VISCOELASTIC CONSTITUTIVE PARAMETERS <i>Ruiwei Peng, Haitian Yang</i>			
Tuesday, June 7 8:30-10:30	Room 9	Tuesday, June 7 8:30-10:50	Room 11
CS 750 - 3: COMPUTATIONAL MODELING OF COMPOSITES <i>Chair:</i> Christine Espinosa		MS 1309 - 2: SCALABLE MULTI-FIDELITY MODELING FOR DESIGN, UNCERTAINTY QUANTIFICATION, AND INVERSE PROBLEMS <i>MS Organizers:</i> Paris Perdikaris, George Em. Karniadakis <i>Chair:</i> Paris Perdikaris	
4523 THERMAL BUCKLING BEHAVIOR OF FUNCTIONALLY GRADED MATERIALS <i>Seok-in Bae, Ji-Hwan Kim</i>	9308 MULTI-FIDELITY INFORMATION FUSION ALGORITHMS FOR QUANTIFYING UNCERTAINTY IN HIGH-DIMENSIONAL SYSTEMS <i>Paris Perdikaris, George Em Karniadakis</i>	7145 MULTI-FIDELITY, MODEL-BASED STOCHASTIC OPTIMIZATION: APPLICATIONS IN RANDOM MEDIA. <i>Constantin Grigo</i>	
4621 NUMERICAL ANALYSIS OF SANDWICH PANELS SUBJECTED TO POINT LOADS <i>Zbigniew Pozorski, Jolanta Pozorska</i>	6117 VARIABLE FIDELITY MODELLING IN MODERN AIRCRAFT DESIGN <i>Marian Zastawny</i>		
11552 STABILIZATION OF THE NUMERICAL PRIMING TO STABILIZATION PHENOMENON IN THE CRUSHING OF A COMPOSITE PANEL USING LOCAL AND DIFFUSE DAMAGE LAWS <i>Florian Tostain, Christine Espinosa, Samuel Rivallant</i>		MS 1310: COMPUTATIONAL METHODS FOR THE SOLUTION OF STOCHASTIC DIFFERENTIAL EQUATIONS <i>MS Organizers:</i> Jianbing Chen, Ioannis Kougoumtzoglou, Vissarion Papadopoulos <i>Chair:</i> Vissarion Papadopoulos	
4634 THE INFLUENCE OF OPENINGS ON THE STRUCTURAL BEHAVIOR OF SANDWICH PANELS WITH NON-ISOTROPIC CORES <i>Monika Chuda-Kowalska, Michal Malendowski, Zbigniew Pozorski</i>	7244 FOUR-DIMENSIONAL PATH INTEGRATION METHOD FOR ESTIMATING THE STOCHASTIC ROLL RESPONSE <i>Wei Chai, Arvid Naess, Bernt Leira</i>	11344 SEISMIC RELIABILITY ASSESSMENT OF FRAME STRUCTURES WITH FLEXIBILITY-BASED STOCHASTIC BEAM-COLUMN ELEMENTS <i>Georgios Balokas, Michalis Fragiadakis</i>	
9643 NUMERICAL SIMULATION OF MECHANICAL BEHAVIOR OF WOVEN COMPOSITE AT DIFFERENT STRAIN RATE BY A COLLABORATIVE ELASTO-PLASTO-DAMAGE MODEL WITH FRACTIONAL DERIVATIVES <i>Alina Krasnobrizha, Patrick Rozicki, Laurent Gornet, Pascal Cossen</i>	11561 MULTISCALE OPTIMIZATION OF A CARBON NANOTUBE/POLYMER STRUCTURE <i>Vissarion Papadopoulos, Maria Tavlaki, Odysseas Kokkinos</i>	12039 PROBABILITY DENSITY EVOLUTION METHOD FOR BUCKLING ANALYSIS OF STOCHASTIC SYSTEMS <i>Vissarion Papadopoulos, Ioannis Kalogeris</i>	

DAY 2 – TUESDAY, JUNE 7

<p>Tuesday, June 7 8:30-10:30</p> <p>MS 1206 - 1: ADVANCES IN NUMERICAL METHODS FOR LINEAR AND NON-LINEAR DYNAMICS AND WAVE PROPAGATION</p> <p><i>MS Organizer:</i> Alexander Idesman <i>Chair:</i> Alexander Idesman</p> <p>4926 KEYNOTE: REDUCTION OF NUMERICAL DISPERSION FOR WAVE PROPAGATION PROBLEMS. APPLICATION TO ISOGEOOMETRIC ELEMENTS AND FINITE ELEMENTS. <i>Alexander Idesman</i></p> <p>5134 NONLINEAR FREQUENCY ANALYSIS FOR FEM <i>Oliver Weeger, Utz Wever, Bernd Simeon</i></p> <p>6813 LAGRANGIAN AND SEMI-LAGRANGIAN GALERKIN METHODS FOR FREE SURFACE PROBLEMS <i>Marta Benítez, Alfredo Bermúdez</i></p> <p>7711 SCALABLE SOLUTION OF THE LINEAR DYNAMICS PROBLEMS IN THE FREQUENCY DOMAIN <i>Mikhail Belyi, Vladimir Belsky, Andrey Larionov, Mintae Kim</i></p> <p>10298 A VOLUME-AGGLOMERATION MULTIRATE TIME ADVANCING APPROACH <i>Emmanuelle Iitam, Stephen Wornom, Bruno Koobus, Alain Dervieux</i></p>	Room 12	<p>Tuesday, June 7 8:30-10:30</p> <p>CS 1020 - 3: EVOLUTIONARY AND DETERMINISTIC METHODS FOR DESIGN, OPTIMIZATION AND CONTROL</p> <p><i>Chair:</i> Kazuhisa Chiba</p> <p>6360 MANIFESTATION OF ASCENDANCY OF EXTINCTION-REIGNITION ON SOUNDING HYBRID ROCKET USING DESIGN INFORMATICS <i>Kazuhisa Chiba, Masahiro Kanazaki, Toru Shimada</i></p> <p>8395 OPTIMIZATION AND KNOWLEDGE DISCOVERY OF AIRCRAFT'S TRAJECTORY DURING LANDING APPROACH BASED ON TIME-SERIES FLIGHT EVALUATION <i>Masahiro Kanazaki, Norazila Othman</i></p> <p>10045 COUPLING FLOW SIMULATION AND TOPOLOGY OPTIMIZATION FOR FIBER-REINFORCED PLASTICS <i>Markus Spadinger, Albert Albers</i></p> <p>8123 GRADIENT-BASED OPTIMAL SHAPE DESIGN REGARDING VIBRATION CRITERIA <i>Sarah Julisson, Christian Fourcade, Paul de Nazelle, Laurent Dumas</i></p> <p>6548 TOWARDS THE OPTIMIZATION OF WINGLETS FOR H-DARRIEUS ROTORS: PARAMETERIZATION AND AUTOMATIZATION FOR PERFORMANCE EVALUATION BASED ON 3D-URANS <i>László Daróczy, Gábor Janiga, Dominique Thévenin</i></p> <p>8228 AN EXAMPLE OF COLUMN DESIGN OPTIMIZATION FOR FAILURE MODE CONTROL OF REINFORCED CONCRETE FRAMES <i>Roberta Muscati</i></p>	Room 17
<p>Tuesday, June 7 8:30-10:30</p> <p>CS 930 - 3: HIGH-ORDER DISCRETIZATION METHODS</p> <p><i>Chair:</i> Andrea Crivellini</p> <p>8104 HYBRID OPENMP/MPI PARALLELIZATION OF A HIGH-ORDER DISCONTINUOUS GALERKIN CFD SOLVER <i>Francesco Bassi, Alessandro Colombo, Andrea Crivellini, Matteo Franciolini</i></p> <p>11312 MIMETIC SPECTRAL ELEMENT METHOD FOR GENERALIZED WAVES <i>Sanna Mönkölä, Sami Kähkönen</i></p> <p>6755 ADAPTIVE POST-PROCESSING METHOD TO REPRESENT HIGH-ORDER NUMERICAL SOLUTIONS <i>Pol-André Haas, Vincent Mouysset, Sébastien Pernet</i></p> <p>7537 ON THE INDUSTRIALIZATION OF HIGH-ORDER FEM FOR COMPUTATIONAL ACOUSTICS <i>Hadrien Beriot, Gwénaël Gabard</i></p> <p>9251 COMPARISON OF FINITE VOLUME HIGH-ORDER SCHEMES FOR THE 2D EULER EQUATIONS <i>Jens Wellner</i></p> <p>9281 NURBS-BASED ISOGEOOMETRIC ANALYSIS FOR BALLISTIC EVALUATION OF TITANIUM PLATES <i>Mattia Montanari, Petros Siegkas, Antonio Pellegrino, Nik Petrinic</i></p>	Room 15	<p>Tuesday, June 7 8:30-10:30</p> <p>STS 2 - 1: GREEN AND SMART INTELLIGENT TRANSPORT SYSTEMS (IST): TOWARDS MORE INTEGRATED COMPUTATIONAL AND IT TOOLS FOR THE DEPLOYMENT OF NOVEL TRAVEL SERVICES</p> <p><i>STS Organizers:</i> Pedro Diez, P. Neittaanmaki, T. Tuovinen, Jacques Periaux</p> <p><i>Chair:</i> Jacques Periaux, Pedro Diez</p> <p>14302 EUROPEAN COMPUTATIONAL TRANSPORT RESEARCH ACTIVITIES <i>Michael Kyriakopoulos</i></p> <p>14305 DRAG REDUCTION VIA TURBULENT BOUNDARY LAYER FLOW CONTROL AND INTERNATIONAL COOPERATION IN AERONAUTICS WITH CHINA <i>Adel Abbas, Eusebio Valero</i></p> <p>14309 THE KEY SUCCESS FACTORS IN FUTURE LOGISTICS <i>Olli Bräysy</i></p> <p>14311 NUMERICAL MODELING OF BALLASTED RAILWAY TRACKS: STOCHASTIC CONTINUUM MODEL OF A GRANULAR MEDIUM, LOCALIZATION AND VIBRATIONS IN THE ENVIRONMENT <i>Regis Cottereau</i></p> <p>14319 MODELING RESISTANCE SPOT WELD FAILURE IN MARTENSITIC BORON STEELS USING A CRITICAL J-INTEGRAL FRACTURE CRITERION <i>Daniel Dorribo, Pedro Díez, Lars Greve, Irene Arias, Xabier Larráyoz Izcarra</i></p>	Room 18

DAY 2 – TUESDAY, JUNE 7

Tuesday, June 7 8:30-10:30	Room 20
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- MS 115 - 1: TUMOR GROWTH MODELING AND THE MECHANICAL ASPECTS OF CANCER**
MS Organizers: Hector Gomez, Assad Oberai, Krishna Garikipati, Kristen Mills, Thomas J.R. Hughes
Chair: Kristen Mills
- 8872** PHASE-FIELD MODELING OF COUPLED TUMOR GROWTH AND ANGIOGENESIS
Jiangping Xu, Guillermo Vilanova, Héctor Gómez
- 11819** MATHEMATICAL MODELING OF INTRAPERITONEAL DRUG DELIVERY
Margo Steupergraet, Giuseppe Falvo D'Urso Labate, Charlotte Debaut, Wim Ceelen, Patrick Segers
- 8012** A REDUCED ORDER MODEL FOR NONLINEAR BIOLOGICAL TISSUES: AN APPLICATION TO SIMULATION OF BRAIN TUMOR GROWTHS
Domenico Borzacchiello, Siamak Niroomandi, Cyril Petibois, Elias Cueto, Francisco Chinesta
- 10583** CONTRIBUTION OF CELL-COLLAGEN FIBRE MECHANICAL INTERPLAY TO INTRATUMOURAL SOLID STRESS BUILD-UP AND IMPLICATIONS FOR TUMOUR GROWTH
Athanassios Pirentis, Sandra Loerakker, Triantafyllos Stylianopoulos
- 11755** EXPERIMENTAL AND MODELING STUDIES ON THE EFFECTS OF PHYSICAL FORCES AND CELL SHAPE ON TUMOR GROWTH
Kristen Mills, Padmini Rangamani, Krishna Garikipati
- 12118** A PARAMETRIC STUDY OF A MULTIPHASE POROUS MEDIA MODEL FOR TUMOR SPHEROIDS AND ENVIRONMENT INTERACTIONS
P. Mascheroni, Daniela P. Boso, C. Stigliano, M. Carfagna, L. Preziosi, P. Decuzzi, B.A. Schrefler

Tuesday, June 7 8:30-10:30	Room 21
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- CS 1010 - 3: COMPUTATIONAL INVERSE PROBLEMS AND OPTIMIZATION**
Chair: Jan Liedmann
- 9911** OPTIMISATION OF STRUCTURES WITH INELASTIC DEFORMATIONS
Jan Liedmann, Franz-Joseph Barthold
- 7325** MATERIAL OPTIMIZATION OF NANOPARTICLES WITH REPECT TO THEIR OPTICAL PROPERTIES
Lukas Pflug, Johannes Semmler, Michael Stingl, Günter Leugering
- 7391** NUMERICAL SHAPE OPTIMIZATION OF NANOSCALE STRUCTURES IN ELECTROMAGNETIC APPLICATIONS
Johannes Semmler, Lukas Pflug, Michael Stingl, Günter Leugering
- 7601** GEARBOX DESIGN VIA MIXED-INTEGER PROGRAMMING
Bastian Dörig, Thorsten Ederer, Peter F. Pelz, Marc E. Pfetsch, Jan Wolf

- 9831** EFFICIENT VARIATIONAL SENSITIVITY ANALYSIS FOR STRUCTURAL OPTIMISATION OF MULTISCALE PROBLEMS
Wojciech Kijanski, Franz-Joseph Barthold
- 9416** ANALYSIS OF NON-LINEAR ENVIRONMENTAL LOAD COMBINATIONS BY EXTENDED CONTOUR-LINE ALGORITHMS
Bernt Leira

Tuesday, June 7 8:30-10:30	Room 22
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- CS 940 - 1: EXTENDED DISCRETIZATION METHODS**
Chair: Wilhelm J.H. Rust
- 10132** XFEM ANALYSIS – INCLUDING BUCKLING – OF COMPOSITE SHELLS CONTAINING DELAMINATION
Wilhelm J.H. Rust, Saleh Yazdani, Peter Wriggers
- 11798** EFFICIENT SIMULATION OF ACOUSTIC WAVE PROPAGATION BY DISCRETE EXTERIOR CALCULUS
Tytti Saksa
- 8841** BEYOND RITZ-GALERKIN: FINITE ELEMENT APPROXIMATIONS ON A MANIFOLD IN THE CONFIGURATION SPACE
Christian Schröppel, Jens Wackerfuß
- 6483** METHODOLOGY OF COMBINED APPLICATION OF DIRECTIONAL DERIVATIVES AND THE EXTENDED FINITE ELEMENT METHOD (X-FEM) FOR SOLVING VIBRATION EIGENVALUE PROBLEMS
Daria Serbichenko, Pascal Cosson, Patrick Rozycski
- 5324** THE USE OF ENRICHED BASE FUNCTIONS IN THE THREE-DIMENSIONAL SCALED BOUNDARY FINITE ELEMENT METHOD
Sascha Hell, Wilfried Becker

Tuesday, June 7 8:30-10:30	Room 23
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- MS 1305: STOCHASTIC MODELS OF FAILURE IN RANDOM HETEROGENEOUS MATERIALS AND COMPLEX NETWORKS**
MS Organizers: Dionissios T. Hristopulos, Tetsu Uesaka
Chair: Dionissios T. Hristopulos
- 10261** EXTREME VALUE DISTRIBUTIONS WITH HEAVY TAILS FOR FINITE-SIZE SYSTEMS
Dionissios Hristopulos
- 4816** STATISTICAL PROPERTIES OF STRENGTH FROM STATISTICAL MECHANICS
Mikko Alava
- 8671** STATISTICAL FAILURE OF FIBRE NETWORK UNDER CREEP CONDITION
Amanda Mattsson, Tetsu Uesaka
- 12124** CONSOLIDATION OF SOIL WITH STOCHASTIC PROPERTIES
Theofilos-Ioannis Manitaras, Manolis Papadrakakis
- 5533** HYDROFRACTURE OF ANISOTROPIC AND HETEROGENEOUS SHALE LAYERS
Michael Marder

10:30-11:00
Coffee Break

SEMI-PLENARY LECTURES

Tuesday, June 7 11:00-13:00	Zeus East	Tuesday, June 7 11:00-13:00	Zeus North
<i>Chair:</i> Kyriakos C. Giannakoglou		<i>Chair:</i> Carlos Felippa	
13266 THE DAWNING OF THE AGE OF FRACTIONAL MODELING IN COMPUTATIONAL SCIENCE AND ENGINEERING <i>George Karniadakis</i>		12149 MODELING AND SIMULATION CHALLENGES IN MATERIALS DESIGN FOR ADDITIVE MANUFACTURING APPLICATIONS <i>Wing Kam Liu</i>	
12401 PROS AND CONS OF SELECTED MIXED GALERKIN AND LEAST-SQUARES FINITE ELEMENT FORMULATIONS <i>Jörg Schröder, Karl Steeger, Nils Viebahn</i>		12460 <i>Replaced by 15672</i> MODELING OF CARBON NANO MATERIALS <i>Kim Meow Liew, Lu-Wen Zhang</i>	
12264 HEAT AND MASS TRANSFER IN TURBULENT FLOW <i>Bernard Geurts</i>		15672 ISOGEOMETRIC TECHNIQUES FOR MORTARING AND CONTACT MECHANICS <i>Annalisa Buffa</i>	
Tuesday, June 7 11:00-13:00	Zeus West	Tuesday, June 7 11:00-13:00	Minos East
<i>Chair:</i> Olivier Allix		<i>Chair:</i> Isaac Harari	
16549 CUTFEM AND CUTIGA: DISCRETIZING GEOMETRY AND PARTIAL DIFFERENTIAL EQUATIONS <i>Mats G. Larson</i>		12145 HETEROGENEOUS ASYNCHRONOUS TIME INTEGRATORS FOR COMPUTATIONAL STRUCTURAL DYNAMICS <i>Anthony Gravouil</i>	
12302 HIGH ORDER FICTITIOUS DOMAIN METHODS – HIGH FIDELITY SIMULATION FOR COMPLEX SOLID MODELS <i>Ernst Rank</i>		5795 NONPARAMETRIC PROBABILISTIC APPROACH OF MODEL UNCERTAINTIES INTRODUCED BY A PROJECTION-BASED NONLINEAR REDUCED-ORDER MODEL <i>Christian Soize, Charbel Farhat</i>	
15508 HYBRID HIERARCHICAL CONCEPTS FOR LARGE SCALE SIMULATIONS <i>Barbara Wohlmuth</i>		12410 A NEW TOPOLOGY OPTIMIZATION METHOD AND ITS APPLICATION TO INNOVATIVE STRUCTURE AND MATERIAL DESIGNS <i>Shinji Nishiwaki, Takayuki Yamada, Kazuhiro Izui</i>	

13:00-14:30
Lunch Break

DAY 2 – TUESDAY, JUNE 7

TECHNICAL SESSIONS

Tuesday, June 7 14:30-16:30	Zeus East	Tuesday, June 7 14:30-16:30	Zeus North
	MS 105 - 1: SIMULATION OF CARDIOVASCULAR PROCEDURES AND DEVICES <i>MS Organizers:</i> Ferdinando Auricchio, Michele Conti, Simone Morganti, Alessandro Reali, Alessandro Veneziani <i>Chair:</i> Alexander Popp		MS 901 - 1: ISOGEOMETRIC METHODS <i>MS Organizers:</i> Yuri Bazilevs, David J. Benson, Rene De Borst, Thomas J.R. Hughes, Trond Kvamsdal, Alessandro Reali, Giancarlo Sangalli, Clemens V. Verhoosel <i>Chair:</i> Thomas J.R. Hughes
6413	KEYNOTE: BOTTOM-UP MODELING OF AAA STENT GRAFTS AND STENT PLACEMENT PROCEDURES <i>Alexander Popp, Marie Oshima</i>	9994	KEYNOTE: HIERARCHIC ISOGEOMETRIC GEOMETRICALLY LINEAR AND NONLINEAR SHELL ELEMENTS <i>Bastian Oesterle, Ekkehard Ramm, Manfred Bischoff</i>
11945	SUTURE-TYPE AFFECTS THE HAEMODYNAMIC PERFORMANCE OF AORTIC VALVE SUBSTITUTES <i>Claudio Capelli, E. Sauvage, C. Corsini, S. Schievano, M. Andreas, G. Burriesci, C. Rath</i>	6345	COMPUTATIONAL ASPECTS OF MORPHOLOGICAL INSTABILITIES USING ISOGEOMETRIC ANALYSIS <i>Berkin Dortdivanlioglu, Ali Javili, Christian Linder</i>
7812	FLUID-STRUCTURE INTERACTION ANALYSIS OF PATIENT-SPECIFIC HEART VALVES <i>Fei Xu, Michael Cheng-Hao Wu, Ming-Chen Hsu, Simone Morganti, Alessandro Reali, Ferdinando Auricchio, Josef Kiendl, David Kamensky</i>	7488	ON DUAL BASIS FUNCTIONS FOR THE ISOGEOMETRIC MORTAR METHOD <i>Wolfgang Dornisch, Ralf Müller</i>
8702	SIMULATING ASCENDING AORTA ENDOGRAFTING IN A DYNAMIC HEART MODEL <i>Jakub Kwiecinski, Zhong You, Raman Uberoi</i>	9877	LOCKING FREE ISOGEOMETRIC STRUCTURAL ELEMENTS PRESERVING SPARSITY OF STIFFNESS MATRICES <i>Bastian Oesterle, Ekkehard Ramm, Manfred Bischoff</i>
		10902	G^1 POLAR SPLINE PATCHES <i>Deepesh Toshniwal, Hendrik Speleers, Thomas J R Hughes</i>
Tuesday, June 7 14:30-16:30	Zeus West	Tuesday, June 7 14:30-16:30	Minos East
	MS 112 - 1: ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBIOLOGY <i>MS Organizers:</i> Christian J. Cyron, Sven Hirsch, Philippe Bijaeng, Roland C. Aydin, Anne M. Robertson, Gerhard A. Holzapfel <i>Chair:</i> Christian J. Cyron, Gerhard A. Holzapfel		MS 501 - 4: ALGORITHMIC ASPECTS OF HIGH-PERFORMANCE COMPUTING FOR MECHANICS AND PHYSICS <i>MS Organizers:</i> Santiago Badia, Victor Calo, Javier Principe <i>Chair:</i> Joan Baiges
7548	KEYNOTE: A BIOCHEMOMECHANICAL ROLE OF THROMBUS IN ABDOMINAL AORTIC ANEURYSMS <i>Paolo Di Achille, John Wilson, Lana Virag, Igor Karsaj, Jay Humphrey</i>	4974	KEYNOTE: TOWARDS SPACE-TIME ITERATIVE SOLVERS BASED ON BALANCING DOMAIN DECOMPOSITION <i>Santiago Badia, Marc Olm</i>
9021	RELATIVE ROLES OF MECHANICS AND BIOCHEMISTRY IN THE INITIATION AND PROGRESSION OF CEREBRAL ANEURYSM THROMBOSIS <i>Malebogo Ngoepe, Yiannis Ventikos</i>	8377	EFFECT OF ADAPTIVE MESH REFINEMENT ON A PARALLEL NON-OVERLAPPING DOMAIN DECOMPOSITION SOLVER <i>Pavel Kus, Jakub Šíštek</i>
9034	MULTISCALE NUMERICAL METHODS FOR AORTIC DISSECTION AND THORACIC ANEURYSM <i>Alireza Yazdani, He Li, Jay Humphrey, George Karniadakis</i>	10290	HYBRID PARALLELISATION OF AN ALGORITHMICALLY DIFFERENTIATED ADJOINT SOLVER <i>Pavanakumar Mohanamurthy, Jan Christian Huckelheim, Jens-Dominik Mueller</i>
7921	EARLY EVENTS OF DISSECTING ABDOMINAL AORTIC ANEURYSM IN ANGIOTENSIN II-INFUSED APOE -/- MICE <i>Lydia Aslanidou, Bram Trachet, Alessandra Piersigilli, Alexis Dorier, Arnaud Leclerc, Rodrigo Fraga-Silva, Alberto Astolfo, Marco Stampanoni, Patrick Segers, Nikolaos Stergiopoulos</i>	10933	PERFORMANCE TUNING OF SUBDOMAIN LOCAL FE SOLVER IN DOMAIN DECOMPOSITION METHOD <i>Hiroshi Kawai, Masao Ogino, Ryuji Shioya, Tomonori Yamada, Shinobu Yoshimura</i>
7149	SYNCHROTRON IMAGING OF DISSECTING ABDOMINAL AORTIC ANEURYSM IN ANGIOTENSIN II-INFUSED APOE -/- MICE <i>Bram Trachet, Rodrigo Fraga-Silva, Alessandra Piersigilli, Lydia Aslanidou, Alberto Astolfo, Marco Stampanoni, Nikolaos Stergiopoulos, Patrick Segers</i>	4625	BLOCK ITERATIVE METHODS AND RECYCLING FOR IMPROVED SCALABILITY OF LINEAR SOLVERS <i>Pierre Jolivet, Pierre-Henri Tournier</i>

DAY 2 – TUESDAY, JUNE 7

<p>Tuesday, June 7 14:30-16:30</p> <p>MS 301 - 2: METHODS FOR CUT AND COMPOSITE MESHES: THEORY, ALGORITHMS AND APPLICATIONS</p> <p><i>MS Organizers:</i> Mats G. Larson, André Massing <i>Chair:</i> André Massing</p> <hr/> <p>6701 ACCURATE INTEGRATION IN CUT ELEMENTS BASED ON CONFORMAL DECOMPOSITION INTO ISOPARAMETRIC ELEMENTS <i>Thomas-Peter Fries</i></p> <p>5997 CAN EMBEDDED BOUNDARY GRIDS COMPUTE HIGH REYNOLDS NUMBER FLOW? <i>Marsha Berger</i></p> <p>6531 CUT FINITE ELEMENT MODELING OF EMBEDDED LOWER-DIMENSIONAL ELASTICITY MODELS <i>Mirza Cenanovic, Peter Hansbo, Mats G. Larson</i></p> <p>7082 DIRECT NUMERICAL SIMULATION OF PARTICULATE FLOWS USING A DISCONTINUOUS GALERKIN IMMERSED BOUNDARY METHOD <i>Dennis Krause, Florian Kummer</i></p> <p>6235 HIGHER ORDER CUT-ELEMENTS FOR WAVE PROPAGATION <i>Simon Sticko, Gunilla Kreiss</i></p> <p>11315 SHARP AND DIFFUSE INTERFACE METHODS: TWO FUNDAMENTAL PARADIGMS FOR NON-BOUNDARY-FITTED MODELING AND DISCRETIZATION <i>Dominik Schillinger, Lam Nguyen, Stein Stoter, Atanas Stavrev, Ying Zhao</i></p>	Minos North	<p>Tuesday, June 7 14:30-16:30</p> <p>MS 1001 - 3: STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION</p> <p><i>MS Organizers:</i> J.F. Aguilar Madeira, Helder C. Rodrigues <i>Chair:</i> Matteo Bruggi</p> <hr/> <p>10127 KEYNOTE: MASS MINIMIZATION OF MULTI-MATERIAL LAMINATED COMPOSITES WITH FAILURE CONSTRAINTS <i>Erik Lund</i></p> <p>10084 GRADIENT BASED STRUCTURAL OPTIMIZATION OF JACKET STRUCTURES WITH FATIGUE AND ULTIMATE LIMIT STATE CONSTRAINTS FOR OFFSHORE WIND TURBINES <i>Jacob Oest, René Sørensen, Lars Chr. T. Overgaard, Erik Lund</i></p> <p>11364 OPTIMIZATION OF A STIFFNESS MEASURE OF HYBRID FIBER COMPOSITE MATERIALS. <i>Filipe J.S. Leal, Jose M. Guedes, Helder C. Rodrigues</i></p> <p>11437 QUASI-NEWTON AND BFGS-LIKE METHOD FOR PDE-CONSTRAINED SHAPE OPTIMIZATION. <i>Jean-Léopold Vié, Eric Cancès, Grégoire Allaire</i></p> <p>10606 EFFICIENT SIZING OF STRUCTURES UNDER STRESS CONSTRAINTS <i>Zhi Hong, Mostafa Abdalla</i></p>	Danae
<p>Tuesday, June 7 14:30-16:30</p> <p>MS 503 - 4: HPC-BASED SIMULATIONS FOR THE ENGINEERING REALM AND INDUSTRIAL APPLICATIONS</p> <p><i>MS Organizers:</i> Makoto Tsubokura, Mariano Vázquez, Takayuki Aoki <i>Chair:</i> Andreas Lintemann</p> <hr/> <p>7982 AERODYNAMICS STUDY USING LOCALLY MESH-REFINED LATTICE BOLTZMANN METHOD FOR A GPU COMPUTATION <i>Yuta Hasegawa, Takayuki Aoki, Hiromichi Kobayashi</i></p> <p>8316 HPC-BASED LES OF WIND FLOW OVER LARGE URBAN AREA WITH SLIGHT UNDULATION <i>Hidenori Kawai, Tetsuro Tamura, Keiji Onishi, Rahul Bale, Makoto Tsubokura, Koji Kondo, Tsuyoshi Nozu, Kazuaki Uchibori</i></p> <p>8375 SCALABLE IMMERSED BOUNDARY METHOD FOR LARGE SCALE SIMULATIONS WITH MOVING IMMERSED STRUCTURES. <i>Rahul Bale, Niclas Jansson, Keiji Onishi, Makoto Tsubokura</i></p> <p>8436 HPC ADAPTIVE FINITE ELEMENT SIMULATION OF FLUID DYNAMICS AND FLUID-STRUCTURE INTERACTION IN INDUSTRIAL APPLICATIONS <i>Johan Hoffman, Johan Jansson, Niclas Jansson, Rodrigo Vilela De Abreu</i></p>	Minos South	<p>Tuesday, June 7 14:30-16:30</p> <p>CS 410 - 2: COMPUTATIONAL FLUID MECHANICS</p> <p><i>Chair:</i> Horia Dumitrescu</p> <hr/> <p>4822 THE VORTICITY CREATION PROCESS AT PHYSICAL SURFACES <i>Horia Dumitrescu, Vladimir Cardos</i></p> <p>11128 INVESTIGATION OF END-WALL EFFECTS ON LOW PRESSURE TURBINES BY USING LARGE-EDDY SIMULATION <i>Dogukan Tugberk Karahan, Seyfullah Cay, Ayse Gul Gungor</i></p> <p>11098 THE OPTIMAL CONTROL OF A MULTI-MASS VIBRATION PROPULSION SYSTEM IN A VISCOUS INCOMPRESSIBLE FLUID <i>Artem Nuriev, Zakhrova Olga</i></p> <p>11224 HIGH-RESOLUTION SIMULATION OF INTERNAL WAVES ATTRACTORS AND IMPACT OF INTERACTION OF HIGH AMPLITUDE INTERNAL WAVES WITH WALLS ON DYNAMICS OF WAVES ATTRACTORS <i>Ilias Sibgatullin, Michael Kalugin</i></p> <p>11990 INDUCED SHOCK WAVE / LAMINAR BOUNDARY LAYER INTERACTION <i>Hasan Avsar, Bayram Celik</i></p>	Europa

DAY 2 – TUESDAY, JUNE 7

Tuesday, June 7	Leda
14:30-16:30	

MS 1101 - 4: REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES

MS Organizers: Francisco Chinesta, Elias Cueto, Antonio Huerta, Pierre Ladeveze, Gianluigi Rozza

Chair: Pierre Ladeveze

- 4784** KEYNOTE: COMPUTATIONAL VADEMECUMS FOR LARGE INDUSTRIAL APPLICATIONS

Francisco Chinesta, Jose Vicente Aguado, Domenico Borzacchiello, Chady Ghnatos, Elias Cueto, David Gonzalez

- 8645** ON THE USE OF MODEL ORDER REDUCTION IN SHAPE AND TOPOLOGY OPTIMIZATION

Enrique Nadal, Juan José Ródenas, José Albelda, Francisco Chinesta

- 8679** LARGE EDDY SIMULATION REDUCED ORDER MODELS

Traian Iliescu

- 8318** EFFICIENT THERMO-MECHANICAL ANALYSIS OF WELDING PROCESSES USING SMART-GFEM

Diego Canales, José Vicente Aguado, Francisco Chinesta, Elías Cueto, Jean-Michel Bergheau, Frederic Boitout

- 8013** COMPUTING PGD SEPARATED REPRESENTATIONS ON MANIFOLDS

Jose V. Aguado, Elena Lopez, Emmanuelle Abisset-Chavanne, Francisco Chinesta, David Gonzalez, Elias Cueto

Tuesday, June 7	Athena
14:30-16:30	

MS 703 - 2: COMPUTATIONAL MECHANICS OF WOOD MATERIALS AND TIMBER STRUCTURES

MS Organizers: Josef Füssl, Josef Eberhardsteiner, Erik Serrano, Michael Kaliske

Chair: Sigurdur Ormarrson

- 9129** WARPING DISPLACEMENT OF PLYWOOD PLATE MODEL

Jouni Freund

- 10027** A NUMERICAL APPROACH TO DESCRIBE FAILURE OF WOOD - FROM THE WOOD CELL LEVEL UP TO WOOD-BASED PRODUCTS

Markus Lukacevic, Josef Füssl, Josef Eberhardsteiner

- 10532** AUTOMATIC GEOMETRIC RECONSTRUCTION OF KNOTS WITHIN WOODEN BOARDS BASED ON FIBRE ANGLE MEASUREMENTS

Georg Kandler, Markus Lukacevic, Josef Füssl

- 10730** A MECHANICAL MODELING APPROACH FOR WOOD-BASED PRODUCTS TAKING THE WOODEN MICROSTRUCTURE INTO ACCOUNT

Josef Füssl, Markus Lukacevic, Mingjing Li, Josef Eberhardsteiner, Chris Martin

- 11300** STRUCTURAL AND MECHANICAL CHARACTERISATION OF ENGLISH WILLOW: A MICRO-CT STUDY

Mohammad Saadatfar, Jin Tao, Michael Turner, Phil Evans

Tuesday, June 7	Artemis
14:30-16:30	

MS 113 - 1: MATHEMATICAL AND NUMERICAL MODELING OF THE HEART

MS Organizers: Luca Dede', Luca Pavarino, Alfio Quarteroni

Chair: Luca Dede', Luca Pavarino

- 5488** KEYNOTE: PARALLEL MULTILEVEL ALGORITHMS FOR FLUID-STRUCTURE INTERACTION PROBLEMS

Xiao-Chuan Cai

- 8450** SCALABLE PRECONDITIONERS FOR FLUID-STRUCTURE INTERACTION PROBLEMS ARISING IN CARDIAC APPLICATIONS

Davide Forti, Luca Dedè, Simone Deparis, Antonello Gerbi, Alfio Quarteroni

- 5958** DYNAMICS OF ARTIFICIAL AORTIC VALVES: A COMBINED EXPERIMENTAL AND NUMERICAL STUDY

Julien Sigüenza, Desirée Pott, Simon Mendez, Simon Sonntag, Franck Nicoud

- 9038** NUMERICAL MODELLING OF BLOOD FLOW IN IDEALISED LEFT VENTRICLES

Anna Tagliabue, Luca Dedè, Alfio Quarteroni

Tuesday, June 7	Aphrodite
14:30-16:30	

MS 104 - 1: GROWTH AND REMODELLING OF LIVING TISSUES IN EXPERIMENT AND SIMULATION

MS Organizers: Antonio Bolea - Albero, Markus Böhl

Chair: Markus Böhl

- 7697** ON THE INFLUENCE OF INHOMOGENEOUS MATERIAL PROPERTIES ON BRAIN MORPHOGENESIS

Silvia Budday, Paul Steinmann, Ellen Kuhl

- 9551** IMAGE-BASED MODELING OF ORGANOGENESIS

Odyssé Michos, Lada Georgieva, Christine Lang, Dagmar Iber

- 7341** GROWTH CONTROL DURING DEVELOPMENT

Dagmar Iber, Jannik Vollmer

- 9454** MODELLING SKELETAL MUSCLE GROWTH

Ekin Altan, Alex Zöllner, Oliver Röhrle

- 6799** ON THE MODELLING OF FINITE GROWTH FROM THE CELLULAR LEVEL

Antonio Bolea Albero, Markus Böhl

Tuesday, June 7	Antigoni
14:30-16:30	

MS 806 - 2: MULTISCALE MODELLING OF MATERIALS AND STRUCTURES

MS Organizers: Tadeusz Burczyński, Xavier Oliver, Maciej Pietrzek, Alfredo Huespe

Chair: Maciej Pietrzek

- 5743** KEYNOTE: A CONTINUUM APPROACH FOR MULTISCALE PROPAGATING MATERIAL FRACTURE MODELING

Javier Oliver, Alfredo E. Huespe, Manuel Caicedo

- 7338** COUPLED 3D DISLOCATION DYNAMICS AT NANO- AND MICRO-SCALES

Jaehyun Cho, Guillaume Anciaux, Jean-François Molinari

- 10105** SINTERING OF SILVER NANOPARTICLES: A FINITE-ELEMENT PHASE FIELD APPROACH

K. Chockalingam, V.G. Kouznetsova, O. van der Sluis, M.G.D. Geers

DAY 2 – TUESDAY, JUNE 7

<p>10168 A MESOSCALE STUDY OF DEFORMATION AND FAILURE OF ANGLE-PLY LAMINATES UNDER TENSILE LOADING BY MEANS OF NUMERICAL HOMOGENIZATION. <i>Marek Romanowicz</i></p> <p>11237 PRISM SOLID-SHELL WITH HETEROGENOUS AND HIERARCHICAL APPROXIMATION BASIS <i>Lukasz Kaczmarczyk, Chris Pearce</i></p>	<p>Tuesday, June 7 14:30-16:30</p> <p>Apollo East</p> <p>MS 801 - 1: MULTISCALE COMPUTATIONAL HOMOGENIZATION FOR BRIDGING SCALES IN THE MECHANICS AND PHYSICS OF COMPLEX MATERIALS</p> <p><i>MS Organizers:</i> Julien Yvonnet, Kenjiro Terada, Peter Wriggers, Marc Geers <i>Chair:</i> Julien Yvonnet</p> <p>16533 KEYNOTE: FINITE ELEMENT FORMULATIONS FOR LARGE STRAINS IN ANISOTROPIC MATERIALS <i>P. Wriggers, J. Schroeder, F. Auricchio</i></p> <p>10415 GENERALIZED ELASTODYNAMICS OF LOCALLY RESONANT ACOUSTIC METAMATERIALS: A REDUCED ORDER HOMOGENIZATION APPROACH <i>Ashwin Sridhar, Varvara Kouznetsova, Marc Geers</i></p> <p>10262 ANALYSIS OF VARIOUS MICROSCOPIC BOUNDARY CONDITIONS IN COMPUTATIONAL HOMOGENIZATION IN MAGNETO-MECHANICS <i>Reza Zabihyan, Julia Mergheim, Paul Steinmann, Ali Javili</i></p> <p>5434 MULTISCALE TOPOLOGY OPTIMIZATION USING THE FE2R METHOD <i>Felix Fritz, Liang Xia, Matthias Leuschner</i></p> <p>5149 VIRTUAL MATERIALS TESTING <i>Karel Matous</i></p>	<p>Tuesday, June 7 14:30-16:30</p> <p>Room 1</p>
<p>MS 919 - 2: RECENT ADVANCES IN NUMERICAL SIMULATION AND ANALYSIS OF KINETIC MODELS</p> <p><i>MS Organizers:</i> E. Harald van Brummelen, Manuel Torrilhon <i>Chair:</i> E. Harald van Brummelen</p> <p>6097 THE SEMI-LAGRANGIAN METHOD FOR VLASOV TYPE EQUATIONS IN DIFFERENT MESH CONTEXTS <i>Michel Mehrenberger, Eric Sonnendrücker</i></p> <p>6703 REALIZABILITY LIMITING IN HIGH-ORDER WENO SOLUTIONS FOR ENTROPY-BASED MOMENT CLOSURES <i>Graham Alldredge, Cory Hauck</i></p> <p>10052 POLYATOMIC MODEL FOR RAREFIED FLOWS <i>Florian Bernard, Angelo Iollo, Gabriella Puppo</i></p> <p>4712 ASYMPTOTIC-PRESERVING STOCHASTIC GALERKIN SCHEMES FOR THE BOLTZMANN EQUATION WITH UNCERTAINTY <i>Jingwei Hu, Shi Jin, Ruiwen Shu</i></p> <p>10386 MESO - MACRO MODELS FOR A HARD SPHERE GAS <i>Sergey Bogomolov, Natalya Esikova, Artem Kuvshinnikov</i></p>	<p>Tuesday, June 7 14:30-16:30</p> <p>Apollo West</p> <p>MS 305 - 1: ADVANCED MESHING METHODS FOR INDUSTRIAL APPLICATIONS</p> <p><i>MS Organizers:</i> Frederic Alauzet, Thierry Coupez, Alain Dervieux, Adrien Loseille <i>Chair:</i> Thierry Coupez</p> <p>7758 PARALLEL CAVITY-BASED ADAPTIVE LOCAL REMESHING FOR LARGE SCALE APPLICATIONS <i>Adrien Loseille, Frederic Alauzet</i></p> <p>10417 SINGULAR MESH GENERATION FROM MULTIPLE OVERSET MESHS: A TOOL FOR INDUSTRIAL APPLICATIONS <i>Gennaro Abbruzese, Marta Cordero Gracia, Mariola Gómez López, Nuno Vinha</i></p> <p>10571 PARALLEL MESH ADAPTATION FOR UNSTEADY COMPUTATIONS USING MULTIGRID METHODS <i>Hugues Digonnet, Thierry Coupez, Luisa Silva</i></p> <p>7258 GENERATION OF ANISOTROPIC HIGH-ORDER HYBRID GRIDS FOR SIMULATION OF HIGH-REYNOLDS NUMBER FLOWS <i>Piotr Szalaty, Jerzy Majewski, Stanislaw Gepner</i></p> <p>10728 FINE GRAIN MULTI THREADED MESH GENERATION <i>Jean-François Remacle</i></p>	<p>Tuesday, June 7 14:30-16:30</p> <p>Room 2</p>

DAY 2 – TUESDAY, JUNE 7

<p>Tuesday, June 7 14:30-16:50</p> <p>MS 1301: THE STOCHASTIC COMPUTER METHODS IN MECHANICS MS Organizers: Marcin Kamiński, Takahiko Kurahashi Chair: Marcin Kamiński Takahiko Kurahashi</p> <p>9229 KEYNOTE: ON FULLY COUPLED THERMO-ELASTO-PLASTIC STOCHASTIC FINITE ELEMENT ANALYSIS OF STEEL STRUCTURES <i>Marcin Kamiński, Michał Strakowski</i></p> <p>9206 THE BOOTSTRAP APPROACH TO THE STATISTICAL SIGNIFICANCE OF PARAMETERS IN THE FIXED EFFECTS MODEL <i>Jacek Pietraszek, Renata Dwornicka, Agnieszka Szczotok</i></p> <p>10416 AN INTRODUCTION TO STOCHASTIC FINITE ELEMENT METHOD ANALYSIS OF HYPERELASTIC STRUCTURES <i>Marcin Kamiński, Damian Sokołowski</i></p> <p>5337 STOCHASTIC TECHNIQUES FOR THE NUMERICAL SOLUTION OF ENGINEERING BOUNDARY VALUE PROBLEMS <i>Victor Maceiras, Manuel Castelheiro</i></p> <p>5810 H-MATRIX BASED SECOND MOMENT ANALYSIS FOR ROUGH RANDOM FIELDS <i>Jürgen Dölz, Helmut Harbrecht, Michael Peters, Christoph Schwab</i></p> <p>4440 FLOW FIELD ESTIMATION IN OPEN CHANNEL BASED ON KALMAN FILTER FINITE ELEMENT METHOD <i>Taichi Yoshiara, Takahiko Kurahashi, Yasuhide Kobayashi, Toshihiko Eto</i></p>	Room 3	<p>Tuesday, June 7 14:30-16:30</p> <p>CS 460 - 2: UNSTEADY FLOW COMPUTATION Chair: Natalya Fedorova</p> <p>10980 SIMULATIONS OF BLAST WAVE PROPAGATION IN OPEN AND CLOSED SPACE <i>Natalya Fedorova, Svetlana Valger, Yulia Zakharova</i></p> <p>10634 PATHWAYS TO IMPROVED AERODYNAMIC DESIGN <i>James Page, Paul Hield, Callum Mantell, Paul Tucker</i></p> <p>5348 NUMERICAL STUDY OF THE NASA COMMON RESEARCH MODEL IN SUBSONIC STALL CONDITION <i>Juan S. Velandia, Omar D. Lopez, Rodrigo A. Jimenez</i></p> <p>6536 ON THE REGULARISATION OF NON-REFLECTING BOUNDARY CONDITIONS NEAR ACOUSTIC RESONANCE <i>Christian Frey, Hans-Peter Kersken</i></p> <p>7105 ON GRID RESOLUTION REQUIREMENTS FOR LES OF WALL-BOUNDED FLOWS <i>Saleh Rezaeiravesh, Mattias Liefvendahl, Christer Fureby</i></p> <p>5316 LINEARISED FREQUENCY DOMAIN GUST ANALYSIS OF LARGE CIVIL AIRCRAFT <i>Philipp Bekemeyer, Reik Thormann, Sebastian Timme</i></p>	Room 5
<p>Tuesday, June 7 14:30-16:30</p> <p>CS 212 - 2: NUMERICAL MODELING OF DAMAGE, FAILURE AND FRACTURE Chair: Jurica Soric</p> <p>7030 KEYNOTE: DAMAGE MODELING USING STRAIN GRADIENT BASED FINITE ELEMENT FORMULATION <i>Filip Putar, Jurica Soric, Tomislav Lesicar, Zdenko Tonkovic</i></p> <p>8689 STUDY ON THE DAMAGE EVOLUTION EQUATION AND SPALLATION OF METALS <i>Jiedong Cao</i></p> <p>5668 DUCTILE FRACTURE CRITERIA IN PREDICTION OF SLANT FRACTURE <i>Petr Kubík, František Šebek, Jindřich Petruška</i></p> <p>6276 PHASE-FIELD MODELING OF FRACTURE IN PARTIALLY SATURATED POROUS MEDIA <i>Tuanny R.M. Cajuhí, Laura De Lorenzis, Lorenzo Sanavia</i></p> <p>12083 DAMAGE DETECTION OF A BRIDGE BY PARAMETRIC STATISTICAL MOMENT METHOD <i>Isabella Failla, Nicola Impollonia, Giuseppe Ricciardi</i></p>	Room 4	<p>Tuesday, June 7 14:30-16:30</p> <p>MS 1214 - 2: HISTORIC MASONRY STRUCTURES: MODELLING, ASSESSMENT & RETROFIT MS Organizers: Panagiotis Asteris, Charilaos Maniatakis, Constantine Spyros Chair: Aikaterini Marinelli</p> <p>8066 A COMBINED EXPERIMENTAL AND NUMERICAL STUDY OF THE PULL-OUT MECHANISM OF THREADED TITANIUM BARS EMBEDDED IN MARBLE BLOCKS <i>Stavros K. Kourkoulis, Aikaterini Marinelli, Ioanna Dakanali</i></p> <p>5718 CONSTRUCTION PHASES ANALYSIS OF UNREINFORCED MASONRY BUILDINGS THROUGH EQUIVALENT FRAME MODEL <i>Francesco Pugi, Alessio Franciosi, Giacomo Sevieri</i></p> <p>8239 AN EXTENSION OF TRACKING ALGORITHMS FOR THE SIMULATION OF MULTIPLE AND INTERSECTING CRACKING <i>Savvas Saloustros, Luca Pelà, Miguel Cervera, Pere Roca</i></p> <p>10185 THREE-DIMENSIONAL NONLINEAR BEHAVIOUR OF MASONRY WALLS MODELLED WITH DISCRETE ELEMENTS <i>Daniele Baraldi, Antonella Cecchi</i></p> <p>11724 FAST KINEMATIC LIMIT ANALYSIS OF FRP REINFORCED MASONRY VAULTS THROUGH A NEW GENETIC ALGORITHM NURBS-BASED APPROACH <i>Andrea Chiozzi, Gabriele Milani, Antonio Tralli</i></p> <p>8509 HISTORICAL MASONRY BUILDINGS IN THE TUSCANY REGION: STATIC ASSESSMENT AND SEISMIC VULNERABILITY OF FOUR ANCIENT PALACES <i>Silvia Caprili, Federico Mangini, Walter Salvatore</i></p>	Room 7
<p>Tuesday, June 7 14:30-16:30</p> <p>CS 212 - 2: NUMERICAL MODELING OF DAMAGE, FAILURE AND FRACTURE Chair: Jurica Soric</p> <p>7030 KEYNOTE: DAMAGE MODELING USING STRAIN GRADIENT BASED FINITE ELEMENT FORMULATION <i>Filip Putar, Jurica Soric, Tomislav Lesicar, Zdenko Tonkovic</i></p> <p>8689 STUDY ON THE DAMAGE EVOLUTION EQUATION AND SPALLATION OF METALS <i>Jiedong Cao</i></p> <p>5668 DUCTILE FRACTURE CRITERIA IN PREDICTION OF SLANT FRACTURE <i>Petr Kubík, František Šebek, Jindřich Petruška</i></p> <p>6276 PHASE-FIELD MODELING OF FRACTURE IN PARTIALLY SATURATED POROUS MEDIA <i>Tuanny R.M. Cajuhí, Laura De Lorenzis, Lorenzo Sanavia</i></p> <p>12083 DAMAGE DETECTION OF A BRIDGE BY PARAMETRIC STATISTICAL MOMENT METHOD <i>Isabella Failla, Nicola Impollonia, Giuseppe Ricciardi</i></p>	Room 4	<p>Tuesday, June 7 14:30-16:30</p> <p>MS 1214 - 2: HISTORIC MASONRY STRUCTURES: MODELLING, ASSESSMENT & RETROFIT MS Organizers: Panagiotis Asteris, Charilaos Maniatakis, Constantine Spyros Chair: Aikaterini Marinelli</p> <p>8066 A COMBINED EXPERIMENTAL AND NUMERICAL STUDY OF THE PULL-OUT MECHANISM OF THREADED TITANIUM BARS EMBEDDED IN MARBLE BLOCKS <i>Stavros K. Kourkoulis, Aikaterini Marinelli, Ioanna Dakanali</i></p> <p>5718 CONSTRUCTION PHASES ANALYSIS OF UNREINFORCED MASONRY BUILDINGS THROUGH EQUIVALENT FRAME MODEL <i>Francesco Pugi, Alessio Franciosi, Giacomo Sevieri</i></p> <p>8239 AN EXTENSION OF TRACKING ALGORITHMS FOR THE SIMULATION OF MULTIPLE AND INTERSECTING CRACKING <i>Savvas Saloustros, Luca Pelà, Miguel Cervera, Pere Roca</i></p> <p>10185 THREE-DIMENSIONAL NONLINEAR BEHAVIOUR OF MASONRY WALLS MODELLED WITH DISCRETE ELEMENTS <i>Daniele Baraldi, Antonella Cecchi</i></p> <p>11724 FAST KINEMATIC LIMIT ANALYSIS OF FRP REINFORCED MASONRY VAULTS THROUGH A NEW GENETIC ALGORITHM NURBS-BASED APPROACH <i>Andrea Chiozzi, Gabriele Milani, Antonio Tralli</i></p> <p>8509 HISTORICAL MASONRY BUILDINGS IN THE TUSCANY REGION: STATIC ASSESSMENT AND SEISMIC VULNERABILITY OF FOUR ANCIENT PALACES <i>Silvia Caprili, Federico Mangini, Walter Salvatore</i></p>	Room 7

DAY 2 – TUESDAY, JUNE 7

<p>Tuesday, June 7 14:30-16:30</p> <p>CS 110 - 4: NUMERICAL MODELS IN BIOMECHANICS</p> <p><i>Chair:</i> Konstantinos Tzirakis</p> <p>10847 FINITE ELEMENT BASED NUMERICAL SIMULATION OF TUMOR BRAIN <i>Konstantinos Tzirakis, John W. Peterson, Yannis Papaharilaou</i></p> <p>10440 ROLE OF VASCULAR NORMALIZATION AND MECHANICAL STRESS ALLEVIATION IN METRONOMIC CHEMOTHERAPY: A COMPUTATIONAL STUDY FOR SOLID TUMOR TREATMENT <i>Fotios Mpekris, James W. Baish, Triantafyllos Stylianopoulos, Rakesh K. Jain</i></p> <p>10486 SWELLING BEHAVIOR OF SOLID TUMORS AND IMPLICATIONS FOR CANCER THERAPY <i>Chrysovalantis Voutouri, Christiana Polydorou, Panagiotis Papageorgis, Triantafyllos Stylianopoulos</i></p> <p>4597 BIOMECHANICS OF THE NEOBLADDER DURING THE FILLING STAGE <i>Aisha Tariq Nusef, Roustem Miftahof, Ziad Al-Naieb</i></p> <p>8837 MULTISCALE BIPHASIC MODELLING OF TUMOUR GROWTH: THE EFFECT OF COLLAGEN MICROMECHANICS ON DRUG DELIVERY <i>Peter A. Wijeratne, Vasileios Vavourakis, John H. Hipwell, Rebecca Shipley, Triantafyllos Stylianopoulos, Andrew Evans, Sarah Pinder, David J. Hawkes</i></p> <p>9243 SIMULATING TISSUE MECHANICS WITH AGENT-BASED MODELS: CONCEPTS, PERSPECTIVES AND SOME NOVEL RESULTS <i>Paul van Liedekerke, Margriet Palm, Nick Jagiella, Dirk Drasdo</i></p>	Room 8	<p>Tuesday, June 7 14:30-16:30</p> <p>MS 1212 - 1: DYNAMICS AND SEISMIC RESPONSE OF ROCKING AND SELF-CENTERING STRUCTURES</p> <p><i>MS Organizers:</i> Matthew DeJong, Elias Dimitrakopoulos, Michalis Fragiadakis</p> <p><i>Chair:</i> Elias Dimitrakopoulos, Matthew DeJong</p> <p>7122 ROCKING RESPONSE OF MASONRY BLOCK STRUCTURES USING MATHEMATICAL PROGRAMMING <i>Francesco Portioli, Lucrezia Cascini, Raffaele Landolfo</i></p> <p>10190 EXPERIMENTAL AND ANALYTICAL INVESTIGATION OF THE SEISMIC RESPONSE OF A COLUMN ROCKING AND ROLLING ON A CONCAVE BASE <i>Jonas A. Bachmann, Patrick Blöchlinger, Matthias Wellauer, Michalis F. Vassiliou, Bozidar Stojadinovic</i></p> <p>10621 SEISMIC ASSESSMENT OF MASONRY ROCKING COLUMNS AND FRAMES UNDER GROUND MOTION EXCITATIONS <i>Ioannis Kavvadias, Lazaros Vasiliadis</i></p> <p>10169 SMOOTH-ROCKING OSCILLATOR UNDER NATURAL ACCELEROGRAMS <i>Blerita Lipo, Gianmarco de Felice</i></p> <p>11696 A MACRO-ELEMENT FORMULATION FOR ROCKING FLEXIBLE BODIES WITH A DEFORMABLE BASE <i>Evangelos Avgenakis, Ioannis N. Pscharis</i></p> <p>8334 CONTROLLED ROCKING, DISSIPATIVE CONTROLLED ROCKING AND MULTI-HIERARCHICAL ACTIVATION: NUMERICAL ANALYSIS AND EXPERIMENTAL TESTING <i>Royce Liu, Alessandro Palermo</i></p> <p>11903 AN INVESTIGATION OF THE DYNAMICS OF ROCKING ISOLATION FOR EARTHQUAKE-RESILIENT DESIGN <i>Sinan Acikgoz, Matthew DeJong</i></p>	Room 10
<p>Tuesday, June 7 14:30-16:30</p> <p>MS 415: COMPUTATIONAL NON-NEWTONIAN FLUID MECHANICS</p> <p><i>MS Organizers:</i> Georgios Georgiou, John Tsamopoulos <i>Chair:</i> Georgios Georgiou</p>	Room 9	<p>Tuesday, June 7 14:30-16:30</p> <p>CS 1200 - 2: STRUCTURAL DYNAMICS</p> <p><i>Chair:</i> Cheol Kim</p>	Room 11
<p>4629 DEVELOPMENT OF CONFINED VISCOPLASTIC FLOWS WITH HETEROGENEOUS WALL SLIP <i>Pandelitsa Panaseti, Maria Philippou, Zacharias Kountouriotis, Georgios Georgiou</i></p> <p>10359 IMPROVING THE EFFICIENCY OF FINITE VOLUME METHODS FOR THE SIMULATION OF VISCOELASTIC FLOWS <i>Alexandros Syrakos, Yannis Dimakopoulos, John Tsamopoulos</i></p> <p>8280 A PATH FOLLOWING ALGORITHM TO COMPUTE BIFURCATION DIAGRAMS IN NATURAL CONVECTION PROBLEMS INVOLVING BINGHAM FLUIDS <i>Marc Medale, Bruno Cochelin</i></p> <p>6722 SIMULATING VISCOELASTIC FREE-SURFACE FLOWS USING AN INTERFACE-TRACKING APPROACH <i>Philipp Knechtges, Maximilian von Danwitz, Marek Behr, Stefanie Elgeti</i></p> <p>9217 VISCOPLASTIC POISEUILLE FLOW IN THE DUCTS WITH WALL SLIP <i>Ekaterina Muravleva, Larisa Muravleva</i></p> <p>9114 OSCILLATORY FLOW PAST A CIRCULAR CYLINDER <i>Andreas Alexandrou, Stavros Kassinos</i></p>		<p>6156 ANALYSIS OF NOISE AND VIBRATION TRANSMISSIBILITY TO VEHICLE INTERIOR FROM A TRANSMISSION HOUSING USING FEM AND BEM <i>Cheol Kim, Ji-Hun Yu</i></p> <p>7050 COMPUTATIONAL METHOD OF DETERMINATION OF INTERNAL EFFORTS IN LINKS OF MECHANISMS AND ROBOT MANIPULATORS WITH STATICALLY DEFINABLE STRUCTURES CONSIDERING THE DISTRIBUTED DYNAMICALLY LOADINGS <i>Zhumadil Baigunchekov, Muratulla Utenov, Nurzhan Utenov, Saltanat Zhilkibayeva</i></p> <p>7918 STATIC AND DYNAMIC ANALYSIS OF A TETHERED AEROSTAT <i>Jean-Sébastien Schotté, Charles Bussy</i></p> <p>9685 EQUIVALENT DAMPING OF TALL BUILDINGS WITH DAMPED OUTRIGGER SYSTEMS FOR SEISMIC AND WIND DESIGN <i>M. Emre Erdemli, Barış Erkuş</i></p> <p>6566 FINITE ELEMENT ANALYSIS OF TIMBER BEAMS WITH FLAWS <i>Janka Kovacikova, Mats Ekevad, Olga Ivankova, Sven Berg</i></p> <p>8809 PREDICTING STRENGTH PROPERTIES OF SAWN SCOTS PINE WOOD MATERIAL USING THERMAL IMAGING <i>Jukka Antikainen, Veikko Möttönen</i></p>	

DAY 2 – TUESDAY, JUNE 7

<p>Tuesday, June 7 14:30-16:30</p> <p>MS 1206 - 2: ADVANCES IN NUMERICAL METHODS FOR LINEAR AND NON-LINEAR DYNAMICS AND WAVE PROPAGATION</p> <p><i>MS Organizer:</i> Alexander Idesman <i>Chair:</i> Alexander Idesman</p> <hr/> <p>11031 KEYNOTE: RECIPROCAL MASS MATRICES IN EXPLICIT DYNAMICS <i>Anne-Kathrin Schäuble, Anton Tkachuk, Manfred Bischoff</i></p> <p>8337 FULL INVERSION OF REFLECTED WAVES WITHOUT LOW TIME FREQUENCIES <i>Vladimir Tcheverda, Guy Chevent, Kirill Gadylshin</i></p> <p>8412 HYBRID ASYNCHRONOUS PML FOR ELASTIC WAVE PROPAGATION <i>Michael Brun, Eliass Zafati, Irini Djearm-Maire, Prunier Florent</i></p> <p>8675 A LAGRANGE EXPLICIT IMPACT ALGORITHM: APPLICATION TO BRIDGE CRANES SUBJECTED TO MULTIPLE IMPACTS DURING AN EARTHQUAKE <i>Fatima-Ezzahra Fekak, Anthony Gravouil, Michael Brun, Bruno Depale</i></p> <p>10804 LOCALIZED SPACE-TIME ADAPTATIVE REFINEMENT BASED ON MULTIGRID FOR TRANSIENT DYNAMIC PROBLEMS. <i>Alexandre Chemin, Thomas Elguedj, Anthony Gravouil</i></p>	<p>Room 12</p>	<p>Tuesday, June 7 14:30-16:30</p> <p>STS 2 - 2: GREEN AND SMART INTELLIGENT TRANSPORT SYSTEMS (IST): TOWARDS MORE INTEGRATED COMPUTATIONAL AND IT TOOLS FOR THE DEPLOYMENT OF NOVEL TRAVEL SERVICES</p> <p><i>STS Organizers:</i> Pedro Diez, P. Neittaanmaki, T. Tuovinen, Jacques Periaux <i>Chair:</i> Pedro Diez, Jacques Periaux</p> <hr/> <p>14322 ECOLOGICAL AND PUBLIC HEALTH CONCERN REGARDING MODERN TRANSPORTATION <i>William E. Fitzgibbon</i></p> <p>14324 LAND-USE (SPATIAL) OPTIMAL PLANNING FOR PORT AREAS <i>Blas Galvan, A. Cacereño, D. Greiner, B. González, G. Winter</i></p> <p>14329 THREE-DIMENSIONAL BIN PACKING PROBLEM WITH A STABILITY REJECTION CRITERION <i>Teemu Linkosuo, Tero Urponen, Henrik Juvonen, Marko Makela, Yury Nikulin</i></p> <p>14331 ROBUST DESIGN OPTIMIZATION OF ENGINESYSTEM AND COMPONENTS <i>Carlo Poloni</i></p>	<p>Room 18</p>
<p>Tuesday, June 7 14:30-16:30</p>			<p>Room 20</p>
<p>MS 115 - 2: TUMOR GROWTH MODELING AND THE MECHANICAL ASPECTS OF CANCER</p> <p><i>MS Organizers:</i> Hector Gomez, Assad Oberai, Krishna Garikipati, Kristen Mills, Thomas J.R. Hughes <i>Chair:</i> Hector Gomez</p> <hr/> <p>8298 MECHANICS OF SPROUTING ANGIOGENESIS IN TUMORS <i>Rui Travasso, Patrícia Santos-Oliveira, António Correia, Tiago Rodrigues, Paulo Matafome, Teresa Ribeiro-Rodrigues, Henrique Girão, Juan Carlos Rodriguez-Manzaneque, Raquel Seiça</i></p>			
<p>MS 111: POPULATION BALANCE MODELING: CURRENT STATUS, FUTURE PROSPECTS AND NOVEL APPLICATIONS FROM NANOPARTICLES' SYNTHESIS TO (LUNG) CANCER</p> <p><i>MS Organizers:</i> Georgios Lolas, Georgios Bourantas, Panagiotis Gavrilidis, Konstantinos Syrigos <i>Chair:</i> Georgios Lolas</p> <hr/> <p>10608 STATISTICAL THERMODYNAMICS OF POPULATIONS <i>Themis Matsoukas</i></p> <p>8879 MOMENT METHODS FOR THE ACCURATE DESCRIPTION OF SOOT DYNAMICS: MATHEMATICAL MODELING AND REALIZABLE NUMERICAL SCHEMES <i>Frédérique Laurent, Tan-Trung Nguyen, Benedetta Franzelli, Rodney O. Fox, Marc Massot</i></p> <p>5511 TAYLOR-SERIES EXPANSION METHOD OF MOMENTS FOR SOLVING POPULATION BALANCE EQUATION <i>Mingzhou Yu, Yueyan Liu</i></p> <p>10547 MULTISCALE COMPUTATIONAL MODELLING OF CANCER GROWTH AND SPREAD: A NOVEL THREE-SCALE MATHEMATICAL APPROACH <i>Dumitru Trucu</i></p> <p>11987 MATHEMATICAL MODELING OF PARTICLE DYNAMICS IN SPRAY FLAMES <i>Vasiliki Tsikourkitoudi, George Lolas, George Bourantas, Panagiotis Gavrilidis, Tao Zhang</i></p>			

DAY 2 – TUESDAY, JUNE 7

Tuesday, June 7
14:30-16:30

Room 21

MS 404 - 1: SIMULATION OF ENVIRONMENTAL FLOWS

MS Organizers: Pablo Ortiz, Piotr K. Smolarkiewicz, Joanna Szmelter
Chair: Joanna Szmelter

- 5857 KEYNOTE: THE EVOLVING STATE-OF-THE-ART IN GLOBAL NUMERICAL WEATHER PREDICTION
Nils Wedi

- 5712 FINITE ELEMENT MODELING OF SHALLOW FLOWS OVER EVOLUTIONARY BEDFORMS
Pablo Ortiz, Jorge Molina

- 10225 APPLICATION OF THE SHALLOW WATER EQUATIONS TO REAL FLOODING CASE
Hani Ali, Pierre-Yves Lagrée, Jose-Maria Fullana

- 9262 COMPATIBLE FINITE ELEMENT METHODS FOR NUMERICAL WEATHER PREDICTION.
Jemma Shipton, Colin Cotter

- 9087 MODELLING OF LONG WAVES (SEICHES) IN CASCAIS BAY.
Vera Bras, Antonio Trigo-Teixeira

Tuesday, June 7
14:30-16:30

Room 22

CS 940 - 2: EXTENDED DISCRETIZATION METHODS

Chair: Artsem Boris Kunin

- 7975 THERMO-MECHANICAL CONTACT BETWEEN CRACK SURFACES IN THE EXTENDED FINITE ELEMENT METHOD
Artsem Boris Kunin, Stefan Loehnert, Peter Wriggers

- 10303 SHELL ELEMENT WITH THICKNESS STRETCH AND TRANSVERSE NORMAL STRESS
Takeki Yamamoto, Takahiro Yamada, Kazumi Matsui

- 11590 A X-FEM APPROACH FOR THE THERMOMECHANICAL MODELING OF THIN LAYERS
Issam Bencheikh, François Biltieryst, Mohammed Nouari

CS 960 - 1: MESHLESS METHODS

Chair: Panos Metsis

- 7042 MODELING OF DEFORMATION RESPONSES USING MESHLESS LOCAL PETROV-GALERKIN (MLPG) APPROACH BASED ON STRAIN GRADIENT ELASTICITY
Boris Jalušić, Tomislav Jarak, Jurica Soric

- 11770 MESHLESS METHODS VS. FEM: A COMPUTATIONAL EFFICIENCY STUDY
Alexander Karatarakis, Panos Metsis, Manolis Papadrakakis

Tuesday, June 7
14:30-16:30

Room 23

MS 1009 - 1: ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION

MS Organizers: Kyriacos C. Giannakoglou, Jens Dominik Mueller
Chair: Jens Dominik Mueller

- 7708 KEYNOTE: CAD-FREE ADJOINT SHAPE OPTIMISATION IN MARITIME TWO-PHASE FLOWS
Thomas Rung, Jörn Kröger

- 4881 TWO-STEPS SHAPE OPTIMIZATION ALGORITHM IMPROVING HYDRODYNAMICS STABILITY
Takashi Nakazawa

- 9306 AERODYNAMIC OPTIMISATION USING ADJOINT METHODS AND PARAMETRIC CAD MODELS
Philip Hewitt, Simão Marques, Trevor Robinson, Dheeraj Agarwal

- 10552 A CONTINUOUS ADJOINT APPROACH FOR VEHICLE INTERIOR NOISE REDUCTION
Christos Kapellos, Michael Hartmann

- 10065 OPTIMISATION OF A U-BEND USING A CAD-BASED ADJOINT METHOD WITH DIFFERENTIATED CAD KERNEL
Salvatore Auriemma, Mladen Banovic, Orest Mykhaskiv, Herve Legrand, Jens-Dominik Mueller, Tom Verstraete, Andrea Walther

16:30-17:00
Coffee Break

DAY 2 – TUESDAY, JUNE 7

TECHNICAL SESSIONS

Tuesday, June 7	Zeus East
17:00-19:00	

MS 105 - 2: SIMULATION OF CARDIOVASCULAR PROCEDURES AND DEVICES

MS Organizers: Ferdinando Auricchio, Michele Conti, Simone Morganti Alessandro Reali Alessandro Veneziani

Chair: Yuri Vassilevski

- 8793** KEYNOTE: PERSONALIZED COMPUTATION OF FRACTIONAL FLOW RESERVE IN CASE OF TWO CONSECUTIVE STENOSES
Yuri Vassilevski, Timur Gamilov, Philip Kopylov

- 8099** MODEL REDUCTION METHODOLOGY FOR ENDOVASCULAR REPAIR SIMULATIONS
Victor A. Acosta Santamaria, Guillaume Daniel, David Perrin, Stephane Avril

- 8690** MODELLING OF PATIENT-SPECIFIC CASES OF ATHEROSCLEROSIS IN CAROTID ARTERIES
Timur Gamilov, Roman Pryamonosov, Sergey Simakov

- 8817** INVESTIGATION OF COMPLEX BLOOD FLOW REGIMES IN MEMBRANE OXYGENATORS USING ENHANCED BLOOD VISCOSITY AND STATISTICAL BLOOD COAGULATION MODELS
Lars Krenkel, Franz Suess, Markus Ruetten

Tuesday, June 7	Zeus West
17:00-19:20	

MS 112 - 2: ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBIOLOGY

MS Organizers: Christian J. Cyron Sven Hirsch, Philippe Bijlenga, Roland C. Aydin, Anne M. Robertson, Gerhard A. Holzapfel

Chair: Gerhard A. Holzapfel, Christian J. Cyron

- 5516** MODELLING THE MECHANOBIOLOGICAL EVOLUTION OF INTRACRANIAL ANEURYSMS: AN INTEGRATIVE IN VIVO, IN VITRO AND IN SILICO APPROACH
Aikaterini Mandaltsi, Wing Ki Wong, Yuqian Mei, Anne M. Robertson, Namrata Gundiah, Paul N. Watton

- 7078** IMPLEMENTATION OF GROWTH AND REMODELING MODEL IN 3D FINITE ELEMENT CODE: APPLICATION TO ABDOMINAL AORTIC ANEURYSM
Igor Karšaj, Nino Horvat, Lana Virag

- 6202** INFLUENCE OF AXIAL FEATURES OF ABDOMINAL AORTIC ANEURYSMS ON THE EXPANSION RATE: A COMPUTATIONAL CASE STUDY USING 3D FINITE ELEMENTS
Lana Virag, Igor Karšaj, Nino Horvat, Simon Ferlin

- 5236** A HOMOGENIZED CONSTRAINED MIXTURE MODEL FOR VOLUMETRIC GROWTH AND REMODELING IN BLOOD VESSELS
Fabian A. Braeu, Roland C. Aydin, Christian J. Cyron

- 5194** MECHANOBIOLOGICAL STABILITY: A NEW PARADIGM TO UNDERSTAND THE ENLARGEMENT OF ANEURYSMS?
Christian J. Cyron, Roland C. Aydin

- 11350** INITIATION AND ENLARGEMENT OF INTRACRANIAL SACCULAR ANEURYSMS USING A RATE-SENSITIVE INELASTIC THEORY OF GROWTH SIMULATED WITH ISOGEOMETRIC ANALYSIS FROM PATIENT-SPECIFIC GEOMETRY WITH COMPARISON TO ALTERNATIVE THEORIES
Fred Nugen, Luca Dede, Michael Borden, Thomas JR Hughes

- 7415** FLOW CONDITIONS IN THE INTRACRANIAL ANEURYSM LUMEN ASSOCIATE WITH INFLAMMATION AND DEGENERATIVE CHANGES OF THE ANEURYSM WALL – IMPLICATIONS FOR THE DIAGNOSTICS OF RUPTURE-PRONE ANEURYSMS
Juan Cebral, Riikka Tulamo, Anne Robertson, Juhana Frösen

Tuesday, June 7	Zeus North
17:00-19:00	

MS 901 - 2: ISOGEOMETRIC METHODS

MS Organizers: Yuri Bazilevs, David J. Benson, Rene De Borst, Thomas J.R. Hughes, Trond Kvamsdal, Alessandro Reali, Giancarlo Sangalli, Clemens V. Verhoosel

Chair: Giancarlo Sangalli

- 7125** DIVERGENCE CONFORMING TURBULENCE WITH THE VARIATIONAL MULTISCALE METHOD
Timo van Opstal, Yuri Bazilevs, Trond Kvamsdal, Jinhuai Yan

- 8285** MIXED ISOGEOMETRIC FINITE CELL METHOD: A COMPARATIVE STUDY OF DIFFERENT ELEMENT FAMILIES
Tuong Hoang, Clemens V. Verhoosel, Ferdinand Auricchio, E. Harald van Brummelen, Alessandro Reali

- 4535** SPLINE-BASED FLUID-STRUCTURE-INTERACTION FOR SLOSHING TANKS
Stefanie Elgeti, Norbert Hosters, Atanas Stavrev, Jan Helmig, Marek Behr

- 10186** WEAKENING THE TIGHT COUPLING BETWEEN GEOMETRY AND SIMULATION IN ISOGEOMETRIC ANALYSIS
Satyendra Tomar, Elena Atroshchenko, Gang Xu, Stephane Bordas

- 7654** APPLICATION OF ADAPTIVE ISOGEOMETRIC ANALYSIS USING HIERARCHICAL B-SPLINES TO HYDRO-MECHANICALLY COUPLED TUNNEL SIMULATIONS
Hoang-Giang Bui, Günther Meschke

- 10793** OPTIMAL AND REDUCED QUADRATURE RULES FOR TENSOR PRODUCT AND HIERARCHICALLY REFINED SPLINES IN ISOGEOMETRIC ANALYSIS
Rene Hiemstra, Francesco Calabro, Dominik Schillinger, Thomas Hughes

Tuesday, June 7	Minos East
17:00-19:00	

MS 501 - 5: ALGORITHMIC ASPECTS OF HIGH-PERFORMANCE COMPUTING FOR MECHANICS AND PHYSICS

MS Organizers: Santiago Badia, Victor Calo, Javier Principe

Chair: Santiago Badia

- 4831** ALGORITHM FOR FAST SIMULATIONS OF SPACE-TIME FINITE ELEMENT METHOD
Marcin Skotnicki, Anna Paszynska, Maciej Paszynski

- 8124** FEMPAR: A MULTISCALE, MULTILEVEL AND MULTIPHYSICS FINITE ELEMENT SCALABLE SOFTWARE
Santiago Badia, Alberto F. Martín, Javier Principe

- 8317** EVALUATION OF A PARALLEL TASK-BASED APPROACH TO ACCELERATE HIGH-ORDER CFD CALCULATIONS ON HETEROGENEOUS ARCHITECTURES.
Raphael Blanchard, Emeric Martin, Florent Renac, Olivier Aumage, Samuel Thibault, François Pellegrini

DAY 2 – TUESDAY, JUNE 7

<p>8321 IMPROVING PARALLEL PERFORMANCE OF FENICS BY HYBRID MPI/PGAS <i>Niclas Jansson, Johan Hoffman</i></p> <p>9103 ADAPTIVE SIMULTANEOUS-FETI: SCALABILITY RESULTS, ROBUSTNESS ASSESSMENTS AND APPLICATION TO FINITE DISPLACEMENT PROBLEMS <i>Christophe Bovet, Augustin Parret-Fréaud, Nicole Spillane, Pierre Gosselet</i></p> <p>8890 PERFORMANCE PORTABILITY FOR MULTI-FLUID PLASMA ASSEMBLY <i>Eric C. Cyr, Matthew Bettencourt, Richard Kramer, Roger P. Pawlowski, Edward Phillips, Allen Robinson, John N. Shadid</i></p>	<p>6218 TOWARDS EXASCALE BEM SIMULATIONS: HYBRID PARALLELISATION STRATEGIES FOR BOUNDARY ELEMENT METHODS <i>Nicola Giuliani, Luca Heltai, Andrea Mola</i></p>
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Tuesday, June 7 **Minos North**

17:00-19:00

MS 301 - 3: METHODS FOR CUT AND COMPOSITE MESHES: THEORY, ALGORITHMS AND APPLICATIONS

MS Organizers: Mats G. Larson, André Massing

Chair: Mats G. Larson

- 9826** A STABILIZED NITSCHE TYPE XFEM FOR NAVIER SLIP BOUNDARY CONDITIONS
Magnus E. Winter, Benedikt Schott, Wolfgang A. Wall

- 11080** A CUT FINITE ELEMENT METHOD FOR MULTI-PHASE FLOWS
Susanne Claus

- 5986** OCTREE FINITE ELEMENT METHOD FOR PDES POSED ON SURFACES
Maxim Olshanskii

- 7198** LEVEL-SET ALGORITHMS SPECIALIZED FOR AN EXTENDED DISCONTINUOUS GALERKIN DISCRETIZATION IN CONTEXT OF TWO-PHASE FLOWS
Martin Smuda, Florian Kummer, Thomas Utz

- 9028** PARALLEL VARIATIONAL TRANSFER BETWEEN ARBITRARILY DISTRIBUTED NON-MATCHING MESHES AND ITS APPLICATION IN CONTACT MECHANICS AND FLUID STRUCTURE INTERACTION
Rolf Krause, Patrick Zulian, Erich Foster, Maria Nestola

Tuesday, June 7 **Minos South**

CS 500 - 1: HIGH PERFORMANCE COMPUTING

Chair: Vincent Legat

- 7798** AN EFFICIENT PARALLEL IMPLEMENTATION OF EXPLICIT MULTIRATE RUNGE-KUTTA SCHEMES
Vincent Legat, Bruno Seny, Jonathan Lambrechts, Jean-François Remacle

- 11181** A FAIR PERFORMANCE COMPARISON BETWEEN HIGH ORDER AND CLASSICAL FINITE VOLUME SCHEMES FOR UNSTRUCTURED GRIDS AND COMPLEX TURBULENT FLOWS
Julien Bodart, Jeremie Gressier, Raphael Lamouroux, Gilles Grondin, Friedrich Grabner

- 10289** LIMITED MEMORY PRECONDITIONERS FOR NONSYMMETRIC PROBLEMS WITH APPLICATION TO STRUCTURAL MECHANICS
Sylvain Mercier, Xavier Vasseur, Nicolas Tardieu, Serge Gratton

- 7506** ON A DYNAMIC SCHEDULING ALGORITHM FOR MASSIVELY PARALLEL COMPUTATIONS OF ATOMIC ISOTOPE
Elizaveta Dorofeeva, Jatin Arora, Stefan Typel, Gevorg Poghosyan, Peter Sanders, Achim Streit

Tuesday, June 7

17:00-19:00

Danae

MS 1001 - 4: STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION

MS Organizers: J.F. Aguilar Madeira, Helder C. Rodrigues

Chair: Dirk Roos

- 6528** ADJOINT OPTIMAL CONTROL PROBLEMS FOR THE FLUID-STRUCTURE INTERACTION SYSTEM
Filippo Menghini, Daniele Cerroni, Roberto Da Vià, Sandro Manservisi, Luca Zaniboni

- 11579** EFFICIENT PARALLELIZATION OF EVOLUTIONARY ALGORITHMS FOR AEROSPACE STRUCTURAL OPTIMIZATION PROBLEMS
Andreas Hauffe, Klaus Wolf

- 7083** OPTIMIZATION OF THE STALL CHARACTERISTICS OF AN UNMANNED AERIAL VEHICLE USING WING FENCES
Jolan Wauters, Jan Vierendeels, Joris Degroote

- 6754** APPLICATION OF WHIRL FLUTTER OPTIMIZATION-BASED SOLUTION TO FULL-SPAN MODEL OF TWIN TURBOPROP AIRCRAFT
Jiri Cecrdle

- 10142** BENDING STIFFNESS OF A MULTILAYERED PLATE
Petr Tovstik, Tatiana M. Tovstik

Tuesday, June 7

17:00-19:00

Europa

CS 410 - 3: COMPUTATIONAL FLUID MECHANICS

Chair: Iurii Polandov

- 9796** INFLUENCE OF ADJACENT ROOMS ON THE DEVELOPMENT OF GAS EXPLOSION
Iurii Polandov, Sergei Dobrikov

- 8561** A SHALLOW WATER EQUATION BASED ON DISPLACEMENT AND PRESSURE AND THE ZU-CLASS SYMPLECTIC METHOD
Feng Wu, Wan-Xie Zhong

- 8820** IMPACT OF EXTERNAL SURROUNDINGS ON NATURAL CONVECTION IN A VERTICAL CHANNEL ASYMMETRICALLY HEATED
Delphine Ramalingom, Alain Bastide

- 9698** THE EFFECT OF FREE CONVECTION FLOWS IN DIFFUSION EXPERIMENTS OF TERNARY MIXTURES
Jordi Pallares, Xavier Ruiz, Josefina Gavalda

- 9914** LARGE EDDY SIMULATION OF SALTATION OVER GAUSSIAN HILLS
Gang Huang, Catherine Le Ribault, Serge Simoëns, Ivana Vinkovic, J.M.Vignon

DAY 2 – TUESDAY, JUNE 7

Tuesday, June 7 17:00-19:00	Leda
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MS 1101 - 5: REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES

MS Organizers: Francisco Chinesta, Elias Cueto, Antonio Huerta, Pierre Ladeveze, Gianluigi Rozza

Chair: Francisco Chinesta

- 4668** A MINIMAL SUBSPACE ROTATION APPROACH FOR OBTAINING STABLE AND ACCURATE LOW-ORDER PROJECTION-BASED REDUCED ORDER MODELS FOR NONLINEAR COMPRESSIBLE FLOW
Irina Tezaur, Maciej Balajewicz

- 6349** HYPER REDUCTION OF NONLINEAR FINITE ELEMENT STRUCTURAL MODELS WITH CONTACT AND FAILURE
Todd Chapman, Philip Avery, Charbel Farhat

- 7608** NEW LATIN-PGD TECHNIQUE FOR FATIGUE LOADING
Mainak Bhattacharyya, David Néron, Pierre Ladevèze, Amélie Fau, Udo Nackenhorst

- 11241** AN INVESTIGATION OF INTERPOLATION TECHNIQUES FOR HIGH-PERFORMANCE REDUCED ORDER MODELS IN COMPUTATIONAL HOMOGENIZATION
Rody A. van Tuijl, Joris J.C. Remmers, Marc G.D. Geers

- 7972** ELECTRICAL FIELDS SIMULATION IN HETEROGENOUS DOMAINS USING THE PROPER GENERALIZED DECOMPOSITION
Chady Ghnatos, Francisco Chinesta, Anais Barasinski

Tuesday, June 7 17:00-19:00	Athena
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MS 703 - 3: COMPUTATIONAL MECHANICS OF WOOD MATERIALS AND TIMBER STRUCTURES

MS Organizers: Josef Füssl, Josef Eberhardsteiner, Erik Serrano, Michael Kaliske

Chair: Josef Eberhardsteiner

- 5947** MOISTURE DEPENDENT THERMOMECHANICAL MODELING OF WOOD AND ITS APPLICATION TO WOOD FORMING PROCESSES
Robert Fleischhauer, Jad Khodor, Michael Kaliske

- 6502** THE EFFECT OF INITIAL GREEN STATE MOISTURE GRADIENTS ON STRESSES IN TIMBER BOARDS DURING DRYING
Sara Florisson, Sigurdur Ormarsson

- 6690** MULTILEVEL COMPUTATIONAL HOMOGENIZATION OF ARCHAEOLOGICAL OAK FOR ELASTIC AND VISCOELASTIC MATERIAL PROPERTIES
Nico van Dijk, Alexey Vorobyev, Gunnar Almkvist, Kristofer Gamstedt

- 8448** GEOMETRIC NONLINEAR ANALYSIS OF A PITCHED ROOF STRUCTURE OF WOOD
Sigurdur Ormarsson, Johan Vessby

Tuesday, June 7 17:00-19:00	Artemis
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MS 113 - 2: MATHEMATICAL AND NUMERICAL MODELING OF THE HEART

MS Organizers: Luca Dede', Luca Pavarino, Alfio Quarteroni

Chair: Luca Dede', Luca Pavarino

- 5088** ANATOMICALLY ACCURATE HIGH RESOLUTION MODELING OF HUMAN WHOLE HEART ELECTROMECHANICS
Christoph Augustin, Aurel Neic, Gernot Plank

- 9193** COMPARISON OF TETRAHEDRAL AND HEXAHEDRAL MESHES FOR FINITE ELEMENT SIMULATION OF CARDIAC ELECTRO-MECHANICS
Bernardo Lino de Oliveira, Joakim Sundnes

- 6449** INFLUENCE OF MECHANO-ELECTRIC FEEDBACKS ON THE CARDIAC BIOELECTRICAL ACTIVITY: A SIMULATION STUDY
Piero Colli Franzone, Luca F. Pavarino, Simone Scacchi, Stefano Zampini

- 5311** UTILISATION AND VALIDATION OF A COMPUTATIONAL MODEL FOR CARDIAC ELECTROMECHANICS
Baris Cansiz, Michael Kaliske, Krunoslav Sveric, Ruth H. Strasser

- 6456** PROXIMAL ISOVELOCITY SURFACE FOR DIFFERENT MITRAL VALVE HOLE GEOMETRIES
Alexandre This, Hernán G. Morales, Odile Bonnefous

Tuesday, June 7 17:00-19:00	Aphrodite
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MS 104 - 2: GROWTH AND REMODELLING OF LIVING TISSUES IN EXPERIMENT AND SIMULATION

MS Organizers: Antonio Bolea - Albero, Markus Böhl

Chair: Antonio Bolea - Albero

- 7763** MUSCLE GROWTH – AN EXPERIMENTAL STUDY
Kay Leichsenring, Tobias Siebert, Markus Böhl

- 8277** MODELING THE EMERGENCE OF LEAF FORM
Adam Runions, Przemyslaw Prusinkiewicz, Miltos Tsiantis

- 9955** NUMERICAL MODELING OF BACTERIAL BIOFILM GROWTH BASED ON AN EXPERIMENTAL STUDY
Dianlei Feng, Henryke Rath, Insa Neuweiler, Udo Nackenhorst, Nico Stumpf, Meike Stiesch

Tuesday, June 7 17:00-19:00	Antigoni
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MS 806 - 3: MULTISCALE MODELLING OF MATERIALS AND STRUCTURES

MS Organizers: Tadeusz Burczyński, Xavier Oliver, Maciej Pietrzki, Alfredo Huespe

Chair: Alfredo Huespe

- 10691** A MULTISCALE APPROACH FOR THERMO-MECHANICAL SIMULATIONS OF LOADING COURSES IN CAST IRON BRAKE DISCS
Christoph Herrmann, Stefan Schmid, Daniel Schneider, Michael Selzer, Britta Nestler

- 10017** MICRO-MACRO RELATIONSHIPS FROM DISCRETE ELEMENT SIMULATIONS OF SINTERING
Jerzy Rojek, Piotr Kowalczyk, Szymon Nosewicz, Kamila Jurczak, Krzysztof Wawrzynk

- 10057** LEVEL SET AND X-FEM IN MODELING THE RESPONSE OF FIBROUS NETWORKS UNDER HYGROSCOPIC SWELLING.
Priyam Samantray, Ron Peerlings, Marc Geers, Thierry Massart

DAY 2 – TUESDAY, JUNE 7

<p>10511 THE KIRKENDALL AND FRENKEL EFFECTS DURING DIFFUSION PROCESS - MATHEMATICAL DESCRIPTION <i>Stanisław Wędrychowicz, Bartek Wierza</i></p> <p>10896 VIRTUAL METALLIC FOAMS. APPLICATION FOR DYNAMIC CRUSHING ANALYSIS <i>Ryszard Pęcherski, Marcin Nowak, Zdzisław Nowak</i></p>	<p>Tuesday, June 7 17:00-19:00</p> <p>Apollo East</p> <p>MS 801 - 2: MULTISCALE COMPUTATIONAL HOMOGENIZATION FOR BRIDGING SCALES IN THE MECHANICS AND PHYSICS OF COMPLEX MATERIALS</p> <p><i>MS Organizers: Julien Yvonnet, Kenjiro Terada, Peter Wriggers, Marc Geers</i> <i>Chair: Karel Matous</i></p> <p>9437 KEYNOTE: INVESTIGATION OF SELF-HEATING EFFECT IN FIBER-REINFORCED THERMOPLASTIC RESIN BY NUMERICAL MATERIAL TESTING <i>Kenjiro Terada, Seishiro Matsubara</i></p> <p>7679 UNSATURATED CEMENT-BASED MATERIALS HOMOGENIZATION USING DIRECT NUMERICAL SIMULATIONS <i>Jean-Luc Delamonte Adia, Julien Yvonnet, Qi-chang He, Nhu-cuong Tran, Julien Sanahuja</i></p> <p>9708 MULTISCALE NUMERICAL ANALYSIS OF NONLINEAR ELECTRIC PROPERTIES OF GRAPHENE-POLYMER NANOCOMPOSITES <i>Xiaoxin Lu, Julien Yvonnet, Fabrice Detrez, Jinbo Bai</i></p> <p>7670 MULTI-SCALE MODELING OF MULTI-PHYSICS PROCESSES IN LITHIUM ION BATTERY CELLS <i>Marco Magri, Davide Grazioli, Alberto Salvadori</i></p> <p>8603 TOWARDS A STOCHASTIC TIME HOMOGENIZATION METHOD <i>Guillaume Puel, Karam Sab</i></p>	<p>Tuesday, June 7 17:00-19:00</p> <p>Room 1</p> <p>MS 1202 - 3: ADVANCED BEAM MODELS <i>MS Organizers: Dinar Camotim, Zuzana Dimitrovová, Rodrigo Gonçalves</i> <i>Chair: Dinar Camotim</i></p> <p>11208 EXTENDED FORMULA FOR A CRITICAL VELOCITY OF A LOAD MOVING ON A BEAM SUPPORTED BY A FINITE DEPTH FOUNDATION <i>Zuzana Dimitrovová</i></p> <p>10221 DYNAMICS OF WIND TURBINE BLADES USING A GEOMETRICALLY-EXACT BEAM FORMULATION <i>Celso Faccio Junior, Alfredo Gay Neto</i></p> <p>8004 REFINED 1D FINITE ELEMENTS FOR THIN-WALLED CURVED STRUCTURES <i>Marco Petrolo, Alberto Garcia de Miguel, Alfonso Pagani, Erasmo Carrera</i></p> <p>7143 A CO-ROTATIONAL NONLINEAR THREE DIMENSIONAL BEAM ELEMENT FOR THE ANALYSIS OF STEEL STRUCTURES SUBJECTED TO FIRE <i>Andrea Morbioli, Jean-Marc Battini, Nicola Tondini</i></p> <p>8977 A COROTATIONAL FINITE ELEMENT TO MODEL BENDING VIBRATIONS OF METALLIC STRANDS <i>Francesco Foti</i></p> <p>10003 A DEGENERATE-CONTINUUM BASED TIMOSHENKO BEAM APPROACH FOR THE AEROELASTIC ANALYSIS OF THE WIND TURBINE BLADES <i>Anthoula Panteli, Dimitris Manolas, Konstantinos Spiliopoulos</i></p>
<p>Tuesday, June 7 17:00-19:00</p> <p>Apollo West</p> <p>MS 919 - 3: RECENT ADVANCES IN NUMERICAL SIMULATION AND ANALYSIS OF KINETIC MODELS</p> <p><i>MS Organizers: E. Harald van Brummelen, Manuel Torrilhon</i> <i>Chair: E. Harald van Brummelen</i></p> <p>8926 KEYNOTE: ACCURATE AND EFFICIENT NUMERICAL SOLUTION OF MOMENT CLOSURES DESCRIBING THREE-DIMENSIONAL VISCOUS AND HEAT-CONDUCTING GASEOUS FLOWS <i>Clinton Groth, Chris Lam, Boone Tensuda</i></p> <p>11764 MESHFREE "DIRECT SIMULATION MONTE CARLO" WITH RADIAL BASIS FUNCTIONS <i>Benjamin Seibold</i></p> <p>11800 LOCAL VELOCITY GRIDS FOR DETERMINISTIC SIMULATIONS OF RAREFIED FLOWS <i>Luc Mieussens, Stéphane Brull, Louis Forestier-Coste</i></p> <p>12895 A NEW CONSERVATIVE MULTISPECIES BGK MODEL <i>Jeff Haack, Michael Murillo, Cory Hauck</i></p>	<p>Tuesday, June 7 17:00-19:00</p> <p>Room 2</p> <p>MS 305 - 2: ADVANCED MESHING METHODS FOR INDUSTRIAL APPLICATIONS</p> <p><i>MS Organizers: Frederic Alauzet, Thierry Coupez, Alain Dervieux, Adrien Loseille</i> <i>Chair: Frederic Alauzet</i></p> <p>10282 ON A HIGH ORDER ANISOTROPIC ADAPTIVE MESHING FRAMEWORK <i>Thierry Coupez</i></p> <p>7712 MESHING OCEAN DOMAINS FOR COASTAL ENGINEERING APPLICATIONS <i>Alexandros Avdis, Christian Jacobs, Simon Mouradian, Jon Hill, Matthew Piggott</i></p> <p>7965 HIGH-ORDER TRACKING METHOD FOR THE SIMULATION OF BURNING FRONTS IN 3D <i>Denis Gueyffier, Bastien Andrieu</i></p> <p>8416 ANISOTROPIC NORM-ORIENTED MESH ADAPTATION FOR COMPRESSIBLE NAVIER-STOKES EQUATIONS <i>Loïc Frazza, Adrien Loseille, Frédéric Alauzet</i></p>	

DAY 2 – TUESDAY, JUNE 7

<p>Tuesday, June 7 17:00-19:00</p> <p>STS 1: THE CAERO2 PLATFORM: DISSEMINATION OF COMPUTATIONAL CASE STUDIES IN AERONAUTICS <i>STS Organizers:</i> Pedro Diez, Jacques Periaux, Sara Guttilla <i>Chair:</i> Pedro Diez, Jacques Periaux</p> <p>16391 TRANSITION EFFECT ON A SHOCK-WAVE / BOUNDARY LAYER INTERACTION <i>Reynald Bur</i></p> <p>16392 HIGH ORDER DISCONTINUOUS GALERKIN METHODS FOR THE SIMULATIONS OF INTERNAL AND EXTERNAL TURBULENT FLOWS <i>Vincent Couaillier</i></p> <p>16400 A COMMON PLATFORM FOR VALIDATION OF AIRCRAFT DRAG REDUCTION TECHNOLOGIES <i>Daniel Redondo</i></p> <p>16398 DRAG REDUCTION FOR THREE DIMENSIONAL WING AT TRANSONIC SPEED <i>Ning Qin</i></p> <p>16396 AERO-THERMAL ANALYSIS OF COMBUSTOR/TURBINE INTERACTION IN AERO-ENGINES: THE CHALLENGE OF TODAY <i>Francesco Martelli, Paolo Adamo, Raul Vazquez</i></p> <p>16395 THE ROLE OF ERCOFTAC TOWARDS THE EUROPEAN AERONAUTICAL AND ENVIRONMENTAL OBJECTIVES; SUPPORTING ADVANCED SIMULATIONS <i>Charles Hirsch</i></p>	Room 3	<p>Tuesday, June 7 17:00-19:00</p> <p>CS 460 - 3: UNSTEADY FLOW COMPUTATION <i>Chair:</i> Hans-Peter Kersken</p> <p>7406 A HYBRID MESH HARMONIC BALANCE SOLVER FOR THE AEROELASTIC ANALYSIS OF TURBOMACHINERY <i>Hans-Peter Kersken, Graham Ashcroft, Christian Frey</i></p> <p>7447 NUMERICAL AND EXPERIMENTAL INVESTIGATIONS OF DYNAMIC STALL PROBLEM ON A 2D HELICOPTER ROTOR BLADE SECTION <i>Antonello Marino, Serena Russo, Giovanni Paolo Reina, Gennaro Esposito, Francesco Capizzano, Carlo De Nicola</i></p> <p>7637 HIGH-ORDER TIME INTEGRATION NUMERICAL METHOD BY ADOMIAN DECOMPOSITION METHOD AND SIMPLE METHOD COUPLING FOR INCOMPRESSIBLE EULER EQUATIONS <i>Imanol Garcia-Beristain, Lakhdar Remaki</i></p> <p>7762 DUAL TIME STEPPING AND NLFD SCHEMES FOR AIRFOIL BUFFET CALCULATIONS <i>Frédéric Plante, Ali Mosahebi, Antoine Lévesque, Éric Laurendeau</i></p> <p>8178 IMMERSED BOUNDARY METHOD AND ASYMPTOTIC NUMERICAL METHOD FOR TRANSIENT SIMULATION OF INCOMPRESSIBLE VISCOUS FLOW AROUND MOVING OBSTACLE <i>Monnier Antoine, Cadou Jean-Marc, Girault Grégory</i></p> <p>5411 CONSISTENT NON-REFLECTING BOUNDARY CONDITIONS FOR BOTH STEADY AND UNSTEADY FLOW SIMULATIONS IN TURBOMACHINERY APPLICATIONS <i>Daniel Schlüß, Christian Frey, Graham Ashcroft</i></p>	Room 5
<p>Tuesday, June 7 17:00-19:00</p> <p>CS 212 - 3: NUMERICAL MODELING OF DAMAGE, FAILURE AND FRACTURE <i>Chair:</i> Marco Paluszny</p> <p>10838 B-SPLINE RULED SURFACE REPRESENTATION OF FRACTURES FOR THREE-DIMENSIONAL ISOGEOOMETRIC GROWTH MODELING <i>Adriana Paluszny, Marco Paluszny</i></p> <p>8703 THEORETICAL STUDY ON EJECTA PRODUCTION FROM METAL SURFACE UNDER SHOCK LOADING <i>Pei Wang</i></p> <p>11666 DISCRETE ELEMENT MODELLING OF A RAMMED EARTH WALL UNDER SHEAR LOADING <i>Fatima Al-Hout, Trung Bui, Ali Limam,</i></p> <p>10786 ANALYTICAL SOLUTION FOR DYNAMIC FRACTURE OF TWO COPLANAR LIMITED-PERMEABLE CRACKS IN MAGNETO-ELECTRO-ELASTIC MATERIAL <i>Peiwei Zhang</i></p> <p>10148 DYNAMIC ENERGY RELEASE RATES IN RUBBER <i>Martin Kroon</i></p> <p>9907 A HIGHER ORDER PHASE-FIELD APPROACH TO FRACTURE FOR FINITE-DEFORMATION CONTACT PROBLEMS <i>Marlon Franke, Christian Hesch, Maik Dittmann</i></p>	Room 4	<p>Tuesday, June 7 17:00-19:20</p> <p>MS 1214 - 3: HISTORIC MASONRY STRUCTURES: MODELLING, ASSESSMENT & RETROFIT <i>MS Organizers:</i> Panagiotis Asteris, Charilaos Maniatakis, Constantine Spyros <i>Chair:</i> Panagiotis Asteris</p> <p>8924 FINITE-DISCRETE ELEMENT MODELLING OF MASONRY INFILL WALLS SUBJECTED TO OUT-OF-PLANE LOADS <i>Laura Liberatore, Marta Bruno, Omar Al Shawa, Monica Pasca, Luigi Sorrentino</i></p> <p>10714 NUMERICAL VALIDATION OF EQUIVALENT-FRAME MODELS FOR URM WALLS <i>Rossella Siano, Guido Camata, Vincenzo Sepe, Enrico Spacone, Pere Roca Fabregat, Luca Pelà</i></p> <p>12273 BEHAVIOR OF SINGLE STORY BEARING WALL MASONRY STRUCTURES IN VARIOUS CONDITIONS <i>Abdelraouf Kassem</i></p> <p>11793 THE ROLE OF RESTORATION MORTARS IN THE EARTHQUAKE PROTECTION OF KAISARIANI MONASTERY <i>Antonia Moropoulou, Maria Apostolopoulou, Petros Moundoulas, Eleni Aggelakopoulou, Louiza Siouta, Asterios Bakolas, Panagiotis G. Asteris, Panagiotis Karakitsios, Maria Douvika</i></p> <p>11937 FIRST RESULTS OF THE VIBRATION-BASED STRUCTURAL HEALTH MONITORING OF A MASONRY DOME <i>Nicola Cavalagli, Gabriele Comanducci, Massimiliano Gioffrè, Vittorio Gusella, Filippo Ubertini</i></p>	Room 7
<p>Tuesday, June 7 17:00-19:00</p> <p>CS 212 - 3: NUMERICAL MODELING OF DAMAGE, FAILURE AND FRACTURE <i>Chair:</i> Marco Paluszny</p> <p>10838 B-SPLINE RULED SURFACE REPRESENTATION OF FRACTURES FOR THREE-DIMENSIONAL ISOGEOOMETRIC GROWTH MODELING <i>Adriana Paluszny, Marco Paluszny</i></p> <p>8703 THEORETICAL STUDY ON EJECTA PRODUCTION FROM METAL SURFACE UNDER SHOCK LOADING <i>Pei Wang</i></p> <p>11666 DISCRETE ELEMENT MODELLING OF A RAMMED EARTH WALL UNDER SHEAR LOADING <i>Fatima Al-Hout, Trung Bui, Ali Limam,</i></p> <p>10786 ANALYTICAL SOLUTION FOR DYNAMIC FRACTURE OF TWO COPLANAR LIMITED-PERMEABLE CRACKS IN MAGNETO-ELECTRO-ELASTIC MATERIAL <i>Peiwei Zhang</i></p> <p>10148 DYNAMIC ENERGY RELEASE RATES IN RUBBER <i>Martin Kroon</i></p> <p>9907 A HIGHER ORDER PHASE-FIELD APPROACH TO FRACTURE FOR FINITE-DEFORMATION CONTACT PROBLEMS <i>Marlon Franke, Christian Hesch, Maik Dittmann</i></p>	Room 4	<p>Tuesday, June 7 17:00-19:20</p> <p>MS 1214 - 3: HISTORIC MASONRY STRUCTURES: MODELLING, ASSESSMENT & RETROFIT <i>MS Organizers:</i> Panagiotis Asteris, Charilaos Maniatakis, Constantine Spyros <i>Chair:</i> Panagiotis Asteris</p> <p>8924 FINITE-DISCRETE ELEMENT MODELLING OF MASONRY INFILL WALLS SUBJECTED TO OUT-OF-PLANE LOADS <i>Laura Liberatore, Marta Bruno, Omar Al Shawa, Monica Pasca, Luigi Sorrentino</i></p> <p>10714 NUMERICAL VALIDATION OF EQUIVALENT-FRAME MODELS FOR URM WALLS <i>Rossella Siano, Guido Camata, Vincenzo Sepe, Enrico Spacone, Pere Roca Fabregat, Luca Pelà</i></p> <p>12273 BEHAVIOR OF SINGLE STORY BEARING WALL MASONRY STRUCTURES IN VARIOUS CONDITIONS <i>Abdelraouf Kassem</i></p> <p>11793 THE ROLE OF RESTORATION MORTARS IN THE EARTHQUAKE PROTECTION OF KAISARIANI MONASTERY <i>Antonia Moropoulou, Maria Apostolopoulou, Petros Moundoulas, Eleni Aggelakopoulou, Louiza Siouta, Asterios Bakolas, Panagiotis G. Asteris, Panagiotis Karakitsios, Maria Douvika</i></p> <p>11937 FIRST RESULTS OF THE VIBRATION-BASED STRUCTURAL HEALTH MONITORING OF A MASONRY DOME <i>Nicola Cavalagli, Gabriele Comanducci, Massimiliano Gioffrè, Vittorio Gusella, Filippo Ubertini</i></p>	Room 7

DAY 2 – TUESDAY, JUNE 7

- 4938** SIMPLE CLOSED FORM HOMOGENIZATION MODEL FOR THE NON LINEAR STATIC AND DYNAMIC ANALYSIS OF RUNNING BOND MASONRY WALLS IN AND OUT OF PLANE LOADED
Gabriele Milani, Elisa Bertolesi
- 9117** PALAZZO LA SAPIENZA IN PISA: STRUCTURAL ASSESSMENT AND RETROFIT OF AN HISTORICAL MASONRY BUILDING IN ITALY
Silvia Caprili, Federico Mangini, Nicola Mussini, Walter Salvatore
- 11844** MODELING THE MECHANICAL RESPONSE OF A LEAD-CORE BEARING DEVICE: DAMAGE MECHANICS APPROACH
Todor Zhelyazov, Rajesh Rupakheti, Simon Olafsson
- 11965** SEISMIC RESPONSE OF LIQUID-CONTAINING TANKS WITH EMPHASIS ON THE HYDRODYNAMIC DISTRESS AND GROUND MOTION CHARACTERISTICS
Marina E. Kalogerakou, Charilaos A. Maniatakis, Constantine C. Spyros, Prodromos N. Psarropoulos

Tuesday, June 7 17:00-19:00	Room 8	Tuesday, June 7 17:00-19:20	Room 10
CS 110 - 5: NUMERICAL MODELS IN BIOMECHANICS <i>Chair:</i> Mihai Dupac		MS 1212 - 2: DYNAMICS AND SEISMIC RESPONSE OF ROCKING AND SELF-CENTERING STRUCTURES <i>MS Organizers:</i> Matthew DeJong, Elias Dimitrakopoulos, Michalis Fragiadakis <i>Chair:</i> Michalis Fragiadakis, Elias Dimitrakopoulos	
4413 EVALUATION OF ANGULAR KINEMATICS OF LOWER LIMB AMPUTEES USING QUANTITATIVE FLUOROSCOPIC IMAGING <i>Alexander Breen, Mihai Dupac</i>		11424 PARAMETRIC INVESTIGATION OF THE DYNAMIC RESPONSE OF RIGID BLOCKS SUBJECT TO SYNTHETIC NEAR-SOURCE GROUND MOTION RECORDS <i>Michalis Fragiadakis, Ioannis Psycharis, George P. Mavroelidis</i>	
6069 NUMERICAL INVESTIGATION ON THE OSSEointegration OF DENTAL IMPLANT UNDER CONSIDERATION OF ELECTROMECHANICAL STIMULATION IN BONE-IMPLANT INTERFACE <i>Seyedalireza Shirazibeheshtiha, Udo Nackenhorst</i>		9386 A SIMPLE ANALYTICAL MODEL FOR THE ROCKING PREWEC SYSTEM <i>Dimitrios Kalliantzis, Sri Sritharan</i>	
7408 FE BONE STRUCTURAL ANALYSIS WITH CT MAPPING OF INHOMOGENEOUS MATERIAL PROPERTIES <i>Miguel Tobias Bahia, Emilio Graciliano Ferreira Mercuri, Mildred Ballin Hecke</i>		10112 AN ANALYTICAL MODEL FOR DYNAMIC RESPONSE OF AN ELASTIC SDOF SYSTEM FIXED ON TOP OF A ROCKING SINGLE-STORY FRAME STRUCTURE: EXPERIMENTAL VALIDATION <i>Jonas A. Bachmann, Christoph Jost, Quentin Studemann, Michalis F. Vassiliou, Bozidar Stojadinovic</i>	
8753 SIMULATING FATIGUE IN MUSCULOSKELETAL MODELS USING SURFACE ELECTROMYOGRAPHY <i>Simon Gross, Franz Suess, Gijsbertus Verkerke, Sebastian Dendorfer</i>		8384 MODELLING CONTACT IN ROCKING STRUCTURES WITH A NONSMOOTH DYNAMICS APPROACH <i>Anastasios I. Giouvanidis, Elias G. Dimitrakopoulos</i>	
8296 DIGITAL IMAGE CORRELATION AND NANOINDENTATION IN EVALUATION OF CONSTITUTIVE RELATIONSHIPS FOR CORTICAL BONE MICROSTRUCTURE <i>Grzegorz Kokot, Witold Ogierman, Konstanty Skalski, Marek Pawlikowski</i>		9376 ENERGY DISSIPATION COMPONENTS IN UNBONDED POST-TENSIONED SINGLE ROCKING WALLS <i>Maryam Nazari, Sri Sritharan</i>	
Tuesday, June 7 17:00-19:00	Room 9	9563 QUASI-STATIC TESTING OF A LARGE-SCALE PRE-CAST BRIDGE WITH CONTROLLED ROCKING POST-TENSIONED CONNECTIONS IN THE SUPERSTRUCTURE <i>Zeinab Chegini, Alessandro Palermo</i>	
MS 1217 - 1: COMPUTATIONAL METHODS IN EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS <i>MS Organizers:</i> Vagelis Plevris, Georgia Kremmyda, Yasin Fahjan <i>Chair:</i> Vagelis Plevris		8340 THE ROLE OF THE PRESTRESSED TENDONS ON THE SEISMIC PERFORMANCE OF HYBRID ROCKING BRIDGE BENTS <i>Anastasios I. Giouvanidis, Elias G. Dimitrakopoulos</i>	
11846 STRUCTURAL DAMAGE IDENTIFICATION USING INCOMPLETE MODAL DATA WITH NATURE-INSPIRED OPTIMIZATION ALGORITHMS <i>Manolis Georgiouidakis, Vagelis Plevris</i>		Tuesday, June 7 17:00-19:00	Room 11
7522 FINITE-DISCRETE NUMERICAL MODELLING OF REINFORCED CONCRETE STRUCTURES <i>Nikolina Zivaljic, Zeljana Nikolic, Hrvoje Smoljanovic, Ivan Balic</i>		CS 1201: COMPUTATIONAL SOIL MECHANICS <i>Chair:</i> Stefano Dal Pont	
10015 A PROBABILISTIC APPROACH TOWARDS AN EVALUATION OF EXISTING CODE PROVISIONS FOR SEISMICALLY ISOLATED STRUCTURES <i>Anastasios Tsiafas, Bozidar Stojadinovic</i>		11824 FEMXDEM MULTI-SCALE REAL-SCALE MODELLING APPLIED TO GEOMATERIALS <i>Albert Argilaga, Jacques Desrues, Stefano Dal Pont, Gael Combe, Danis Caillerie</i>	
11240 NUMERICAL NON-LINEAR SIMULATION OF THE IN-PLANE BEHAVIOUR OF R/C FRAMES WITH MASONRY INFILLS UNDER SEISMIC TYPE LOADING <i>George Manos, Vasilios Soulis</i>		10987 INFLUENCES OF PHYSICAL AND STATISTICAL PARAMETERS OF RANDOM HETEROGENEOUS MEDIA ON SPATIAL VARIABILITY OF SEISMIC GROUND MOTIONS <i>Angkeara Svay, Didier Clouteau, Irmela Zentner, Régis Cottereau</i>	
		8409 NUMERICAL SIMULATION OF FREEZING PROCESS OF SOIL IN BACK FILLED CHAMBER WITH A BURIED PIPE <i>Hosung Shin</i>	

DAY 2 – TUESDAY, JUNE 7

- 7331** THREE-DIMENSIONAL BE-FE MODEL OF BUCKET FOUNDATIONS IN POROELASTIC SOILS
Jacob D. R. Bordón, Juan J. Aznárez, Orlando F. Maeso

- 6739** A MORE COMPREHENSIVE MODELING OF CONTACT FORCE DURING SHEAR TESTING USING DEM
Varvara Roubtsova, Mohamed Chekired

Tuesday, June 7 Room 12
17:00-19:20

MS 1206 - 3: ADVANCES IN NUMERICAL METHODS FOR LINEAR AND NON-LINEAR DYNAMICS AND WAVE PROPAGATION

MS Organizer: Alexander Idesman

Chair: Alexander Idesman

- 10435** AN H-MATRIX BASED DIRECT SOLVER FOR BOUNDARY ELEMENT METHOD IN 3D ELASTODYNAMICS
Stéphanie Chaillat, Patrick Ciarlet, Luca Desiderio

- 9453** INCOMPATIBLE MODES IN EXPLICIT DYNAMICS – EFFICIENCY, POSSIBILITIES AND LIMITS
Christoph Schmied, Steffen Mattern, Karl Schweizerhof

- 4970** RAYLEIGH METHOD APPLIED TO A 46-M-HIGH CONCRETE MAST
Alexandre de M. Wahrhaftig, Reyolando M. L. R. F. Brasil

- 4588** ASYMPTOTIC IMPACT BEHAVIOR OF GOUPILLAUD-TYPE LAYERED ELASTIC MEDIA
George Gazonas, Ani Velo, Raymond Wildman

- 9176** A DISPERSION MINIMIZED MIMETIC METHOD FOR ACOLD PLASMA MODEL
Vrushali A. Bokil, Vitaliy Gyrya, Duncan A. McGregor

- 10729** THERMOMECHANICAL NUMERICAL SIMULATION OF IMPACTS ON ELASTIC-PLASTIC SOLIDS WITH THE FINITE VOLUME METHOD
Thomas Heuzé

Tuesday, June 7 Room 15
17:00-19:00

CS 930 - 4: HIGH-ORDER DISCRETIZATION METHODS

Chair: Alberto Costa Nogueira Junior

- 8319** ON THE CHOICE OF SHOCK CAPTURING SCHEMES FOR THE SOLUTION OF THE LWR TRAFFIC FLOW EQUATION USING A HIGH ORDER MODAL DISCONTINUOUS GALERKIN DISCRETIZATION
Alberto Costa Nogueira Junior, João Lucas de Sousa Almeida, Cláudio Alessandro de Carvalho Silva

- 11923** HYBRID RIEMANN SOLVERS FOR LARGE SYSTEMS OF CONSERVATION LAWS
Birte Schmidtmann, Mariia Astrakhantseva, Manuel Torrilhon

- 7193** A 3D ISOGEOOMETRICAL BOUNDARY ELEMENT ANALYSIS FOR NON-LINEAR GRAVITY WAVE PROPAGATION
Jorge Maestre, Jordi Pallarés, Ildefonso Cuesta

- 9211** NONLINEAR RESIDUAL-BASED VISCOSITIES FOR ADAPTIVE STABILIZED FINITE ELEMENT METHODS IN TURBULENT FLOW PROBLEMS
Aurélien Larcher, Murtazo Nazarov

- 9356** ADAPTIVE TIME STEPPING AND REFINED EXPLICIT INTEGRATION WITH EMBEDDED ERROR CONTROL FOR NUMERICAL MODELLING OF SALT CREEP
Roberto Quispe, Pedro Firme, Deane Roehl

Tuesday, June 7
17:00-19:00

Room 17

CS 1300 - 1: UNCERTAINTY QUANTIFICATION AND ERROR ESTIMATION

Chair: Guillermo Hauke

- 5657** POINTWISE ERROR ESTIMATION FOR LINEAR PARTIAL DIFFERENTIAL EQUATIONS BASED ON THE VARIATIONAL MULTISCALE THEORY
Guillermo Hauke, Diego Irisarri

- 8838** AN EFFICIENT AERODYNAMIC SHAPE OPTIMIZATION FRAMEWORK FOR ROBUST DESIGN OF AIRFOILS USING SURROGATE MODELS
Daigo Maruyama, Dishi Liu, Stefan Görtz

- 10644** UNCERTAINTY QUANTIFICATION BY THE POLYNOMIAL CHAOS EXPANSION METHOD WITH ORDER ADJUSTMENT
Koji Shimoyama

- 10011** COMPARISON BETWEEN A POLYNOMIAL CHAOS SURROGATE MODEL AND MARKOV CHAIN MONTE CARLO FOR INVERSE UNCERTAINTY QUANTIFICATION BASED ON AN ELECTRIC DRIVE TEST BENCH
Philipp Glaser, Michael Schick, Kosmas Petridis, Vincent Heuveline

- 8533** MIASC: AN ADAPTIVE APPROACH TO UNCERTAINTY QUANTIFICATION IN DISCRETIZED PROBLEMS OF REDUCED REGULARITY - PART 1: ILLUSTRATION OF THE METHOD
Robert L. Gates, Maximilian R. Bittens, Udo Nackenhorst

Tuesday, June 7

Room 18

MS 1007 - 1: ADDITIVE MANUFACTURING AND OPTIMIZATION

MS Organizers: Ekkehard Ramm, Ole Sigmund, Pierre Duysinx, Wing Kam Liu

Chair: Ole Sigmund, Paolo Venini

- 7545** KEYNOTE: INDUSTRIAL ADDITIVE MANUFACTURING AND DESIGNING
Claus B.W. Pedersen, James Fort, Peter M. Clausen, Subham Sett

- 5873** TOPOLOGY OPTIMIZATION FOR ADDITIVE MANUFACTURING WITH CONTROLLABLE SUPPORT STRUCTURE COSTS
Matthijs Langelaar

- 8988** TOPOLOGY OPTIMIZATION FOR ADDITIVE MANUFACTURING: ACCOUNTING FOR OVERHANG LIMITATIONS USING A VIRTUAL SKELETON
Yoram Mass, Oded Amir

- 5120** SHAPE AND TOPOLOGY OPTIMIZATION ACCOUNTING FOR ADDITIVE MANUFACTURING CONSTRAINTS: INFLUENCE OF THE BUILD DIRECTION IN POWDER-BINDING TECHNOLOGIES
Grégoire Allaire, Charles Dapogny, Rafael Estevez, Alexis Faure, Georgios Michailidis, Guillaume Parry

- 5725** TOPOLOGY OPTIMIZATION FOR MANUFACTURING WITH OPTICAL MICROLITHOGRAPHY
Mingdong Zhou, Boyan S. Lazarov, Ole Sigmund

DAY 2 – TUESDAY, JUNE 7

Tuesday, June 7 17:00-19:00	Room 20	Tuesday, June 7 17:00-19:00	Room 21
MS 116: MULTISCALE & MULTILEVEL MODELING IN DETOXIFYING ORGANS AND ORGANS OF THE DIGESTIVE TRACT <i>MS Organizers:</i> Dirk Drasdo, Irene Vignon-Clementel <i>Chair:</i> Dirk Drasdo, Irene Vignon-Clementel		MS 404 - 2: SIMULATION OF ENVIRONMENTAL FLOWS <i>MS Organizers:</i> Pablo Ortiz, Piotr K. Smolarkiewicz, Joanna Szmelter <i>Chair:</i> Pablo Ortiz	
11408 IMAGING AND MODELLING THE BLOOD CIRCULATION THROUGH THE LIVER AND KIDNEY <i>Charlotte Debbaut, Diethard Monbaliu, Geert Peeters, Patrick Segers</i>		4852 A HYBRID ALL-SCALE FINITE-VOLUME MODULE FOR GLOBAL WEATHER PREDICTION <i>Piotr Smolarkiewicz, Willem Deconinck, Mats Hamrud, Christian Kuehnlein, George Mrozynski, Joanna Szmelter, Nils Wedi</i>	
5384 A MULTILEVEL FRAMEWORK TO STUDY THE ALTERING HEPATIC CIRCULATION IN CIRRHOTIC RATS. <i>Geert Peeters, Charlotte Debbaut, Pieter Cornillie, Winnok De Vos, Thomas De Schryver, Diethard Monbaliu, Wim Laleman, Patrick Segers</i>		7716 ATLAS, A PARALLEL FRAMEWORK FOR EARTH SYSTEM MODELLING <i>Willem Deconinck</i>	
7859 AMMONIA DETOXIFICATION IN THE LIVER AFTER PARTIAL HEPATECTOMY <i>Noemie Boissier, Geraldine Celliere, Irene Vignon-Clementel, Dirk Drasdo</i>		9292 FINITE ELEMENT METHODS FOR 3D SIMULATION OF WAVE AND CURRENT INTERACTION WITH GRANULAR MEDIA <i>Chris Kees, Aggelos Dimakopoulos, Matthew Farthing</i>	
9083 ANALYSING DRUG-INDUCED LIVER INJURY WITHIN A WHOLE-BODY CONTEXT <i>Lars Kuepfer, Christoph Thiel, Henrik Cordes, Lars M. Blank</i>		6606 AN UNSTRUCTURED MESH MODEL FOR STRATIFIED OROGRAPHIC FLOWS <i>Mike Gillard, Joanna Szmelter, Zhao Zhang, Piotr Smolarkiewicz</i>	
7436 MODELING TOOLS FOR WHOLE LIVER HEMODYNAMICS AND FUNCTION DURING PARTIAL HEPATECTOMY <i>Chloe Audebert, Eric Vibert, Jean-Frédéric Gerbeau, Irene Vignon-Clementel</i>		7077 SIMULATION OF SOUNDPROOF FLOWS PAST A SPHERE <i>Zhi Xin Cao, Joanna Szmelter, Zhao Zhang, Piotr K. Smolarkiewicz</i>	
10830 ON A MULTISCALE AND MULTIPHASE MODEL OF FUNCTION, PERfusion AND GROWTH IN HUMAN LIVER <i>Tim Ricken, Daniel Werner, Hermann-Georg Holzhütter, Matthias König, Uta Dahmen, Olaf Dirsch</i>		Tuesday, June 7 17:00-19:00	
9192 AGENT-BASED MULTI-LEVEL SIMULATIONS OF DRUG-INDUCED LIVER DAMAGE AND REGENERATION: FROM DATA TO MODELS AND BACK <i>Dirk Drasdo, Stefan Hoehme, Geraldine Celliere, Ahmed Ghallab, Adrian Friebel, Noemie Bossier, Sebastian Zellmer, Rolf Gebhardt, Jan Hengstler</i>		CS 960 - 2: MESHLESS METHODS <i>Chair:</i> Christian Weißenfels	
		7025 OPTIMAL TRANSPORTATION MESHFREE APPROXIMATION SCHEME BASED ON MEAN VALUE COORDINATES <i>Christian Weißenfels, Peter Wriggers</i>	
		7064 THREE-DIMENSIONAL CRACK PROPAGATION ANALYSIS USING MESHLESS POINT COLLOCATION METHOD <i>Eiji Tanaka</i>	
		10975 ANALYSIS OF NON-NEWTONIAN FLUID FLOW AND HEAT TRANSFER IN AN INTERNALLY FINNED SQUARE CHANNEL <i>Jakub K. Grabski, Jan A. Kołodziej</i>	
		9519 A CELL-BASED SMOOTHED MESHFREE METHOD FOR AXISYMMETRIC PROBLEMS IN SATURATED MEDIA <i>Arash Tootoonchi, Arman Khoshghalb, Nasser Khalili</i>	
		11774 EFFICIENT SHAPE FUNCTIONS EVALUATION OF EFG MESHLESS METHOD <i>Panos Metsis, Manolis Papadrakakis</i>	
		12055 BLOCK-WISE ASSEMBLY OF GAUSS QUADRATURE-BASED MATRICES <i>Alexander Karatarakis, Manolis Papadrakakis</i>	

DAY 3 – WEDNESDAY, JUNE 8

TECHNICAL SESSIONS

Wednesday, June 8 8:30-10:30		Zeus East	Wednesday, June 8 8:30-10:30		Zeus North
MS 106 - 2: DIRECT AND INVERSE METHODS FOR CARDIOVASCULAR AND PULMONARY BIOMECHANICS <i>MS Organizers:</i> Wolfgang A. Wall, C. Alberto Figueroa, Marek Behr <i>Chair:</i> Stephane Avril			MS 901 - 3: ISOGEOMETRIC METHODS <i>MS Organizers:</i> Yuri Bazilevs, David J. Benson, Rene De Borst, Thomas J.R. Hughes, Trond Kvamsdal, Alessandro Reali, Giancarlo Sangalli, Clemens V. Verhoosel <i>Chair:</i> Alessandro Reali		
8947 A DECONVOLUTION-BASED LES METHOD FOR INCOMPRESSIBLE FLOWS AT MODERATELY LARGE REYNOLDS NUMBERS <i>Luca Bertagna, Annalisa Quaini, Alessandro Veneziani</i>			11265 AN ISOGEOMETRIC ANALYSIS INVESTIGATION FOR MULTIPHYSICS FORMULATIONS AT LARGE STRAINS <i>Lei Zhang, Stéphane Lejeune, Dominique Eyheramendy</i>		
10106 NUMERICAL MODELING OF COMPENSATION MECHANISMS FOR PERIPHERAL ARTERIAL STENOSES <i>Tobias Köppel, Rainer Helmig, Barbara Wohlmuth, Daniel Drzisga, Ulrich Pohl</i>			6165 ANALYSIS OF LAMINATED COMPOSITE PLATES USING ISOGEOMETRIC COLLOCATION METHOD <i>G S Pavan, K S Nanjunda Rao</i>		
7336 INVESTIGATING FLOW UNSTEADINESS IN REALISTIC AND OPTIMISED ARTERIO-VENOUS FISTULAE <i>Lorenza Grechy, Francesco Iori, Richard W Corbett, Wladyslaw M W Gedroyc, Neill Duncan, Colin G Caro, Peter E Vincent</i>			11975 HIERARCHICAL H-REFINEMENT IN ISOGEOMETRIC ANALYSIS WITH NURBS <i>Manos Trypakis, Manolis Papadrakakis</i>		
6985 NUMERICAL METHODS FOR THE OCULAR HEMODYNAMICS <i>Matteo Aletti, Jean-Frédéric Gerbeau, Damiano Lombardi</i>			6689 ADAPTIVE ISOGEOMETRIC ANALYSIS OF PHASE-FIELD MODELS <i>Markus Kästner, Paul Hennig, Philipp Metsch</i>		
7462 A TREE-PARENCHYMA LUNG MODEL: NUMERICAL SCHEMES AND APPLICATIONS <i>Nicolas Pozin, Spyridon Montesantos, Georges Caillibotte, Marine Pichelin, Irène Vignon-Clementel, Celine Grandmont</i>			9227 AN IMPLICIT TIME INTEGRATION HIGH-ORDER MATERIAL POINT METHOD FOR SMALL AND LARGE DEFORMATION PROBLEMS: FORMULATION AND ANALYSIS WITHIN THE ISOGEOMETRIC FRAMEWORK <i>Yousef Ghaffari Motlagh, William M. Coombs</i>		
9636 ON THE IMPROVEMENT OF A PHYSIOLOGICAL BLOOD DAMAGE MODEL FOR HEMOLYSIS PREDICTIONS IN MEDICAL DEVICES <i>Stefan Haßler, Lutz Pauli, Marek Behr</i>			7502 MODELLING STIFFENED LIGHTWEIGHT STRUCTURES WITH ISOGEOMETRIC ANALYSIS VIA MORTAR METHODS <i>Malte Woidt, Kay Sommerwerk, Matthias C. Haupt, Peter Horst</i>		
Wednesday, June 8 8:30-10:30		Zeus West	Wednesday, June 8 8:30-10:30		Minos East
MS 112 - 3: ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBIOLOGY <i>MS Organizers:</i> Christian J. Cyron, Sven Hirsch, Philippe Bijaen, Roland C. Aydin, Anne M. Robertson, Gerhard A. Holzapfel <i>Chair:</i> Sven Hirsch, Anne M. Robertson			MS 1101 - 6: REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES <i>MS Organizers:</i> Francisco Chinesta, Elias Cueto, Antonio Huerta, Pierre Ladevèze, Gianluigi Rozza <i>Chair:</i> Antonio Huerta		
5993 KEYNOTE: CONNECTING THE LOCAL HEMODYNAMIC CONDITIONS TO THE WALL STRUCTURE IN HUMAN CEREBRAL ANEURYSMS <i>Juan Cebral, Xinjie Duan, Bongjae Chung, Fernando Mut, Khaled Aziz, Anne Robertson</i>			11144 A NEW PGD APPROACH FOR PARAMETRIZED PROBLEMS INCLUDING POSITIONAL PARAMETERS <i>David Néron, Pierre Ladevèze, Amaury Courard</i>		
7889 ROLES OF TGF- β AND DYNAMIC STRETCHING ON FIBROBLASTS <i>Siddhartha Jaddiva, Merchant Nandan, Shaktidhar Dandapani, Paturu Kondaiah, Paul Watton, Namrata Gundiah</i>			7816 HIPOD: A POD-BASED HIERARCHICAL MODEL REDUCTION FOR INVERSE PROBLEMS IN FLUID DYNAMICS <i>Cristina Cova, Massimiliano Lupo Pasini, Simona Perotto, Lorenzo Sala, Alessandro Veneziani</i>		
8181 MECHANICS AND MICROSTRUCTURE OF HEALTHY HUMAN AORTAS AND AAA TISSUES: EXPERIMENTAL ANALYSIS AND MODELING <i>Justyna A. Niestrawska, T.U. Cohnert, G.A. Holzapfel</i>			6076 AN ITERATIVE MODEL ORDER REDUCTION SCHEME FOR A SPECIAL CLASS OF BILINEAR DESCRIPTOR SYSTEMS APPEARING IN CONSTRAINT CIRCUIT SIMULATION <i>Pawan Goyal, Peter Benner</i>		
7902 IN VIVO CONSTITUTIVE PARAMETER IDENTIFICATION OF THE INDIVIDUAL AAA WALL BASED ON 4D ULTRASOUND STRAIN IMAGING DATA <i>Andreas Wittek, Claus-Peter Fritzen, Christopher Blasé</i>			6579 POD-BASED “VIRTUAL CHARTS” FOR PARAMETRIC STUDIES OF WELDING PROCESSES <i>Ye Lu, Nawfal Blal, Anthony Gravouil</i>		
5492 EFFECT OF CALCIFICATION ON ANEURYSM STRENGTH <i>Konstantin Volokh, Jacob Aboudi</i>			5891 REDUCED BASIS METHOD FOR POISSON-BOLTZMANN EQUATION <i>Peter Benner, Lihong Feng, Martin Hess, Cleophas Kweyu, Matthias Stein</i>		

DAY 3 – WEDNESDAY, JUNE 8

<p>Wednesday, June 8 8:30-10:30</p> <p>MS 301 - 4: METHODS FOR CUT AND COMPOSITE MESHES: THEORY, ALGORITHMS AND APPLICATIONS</p> <p><i>MS Organizers:</i> Mats G. Larson, André Massing <i>Chair:</i> Mats G. Larson</p> <p>7955 MULTIMESH: FEM ON ARBITRARILY MANY INTERSECTING MESHES <i>August Johansson, Benjamin Kehlet, Mats G Larson, Anders Logg</i></p> <p>8247 HIGH-ORDER FINITE VOLUME METHODS FOR HYPERBOLIC PDES ON CARTESIAN GRIDS WITH EMBEDDED BOUNDARIES <i>Christiane Helzel</i></p> <p>9191 MASS CONSERVATION FOR UNFITTED DG CUT-CELL METHODS ON EVOLVING DOMAINS <i>Christian Engwer, Sebastian Westerheide</i></p> <p>7609 SIMULATION OF DEFORMATION AND FLOW IN FRACTURED, POROELASTIC MATERIALS <i>Katja Hanowski, Oliver Sander</i></p>	<p>Minos North</p>	<p>Wednesday, June 8 8:30-10:30</p> <p>MS 923 - 1: NOVEL DISCRETIZATION METHODS – MATHEMATICAL AND MECHANICAL ASPECTS</p> <p><i>MS Organizers:</i> Jörg Schröder, Peter Wriggers, Ferdinando Auricchio, Carsten Carstensen <i>Chair:</i> Jörg Schröder</p> <p>11849 KEYNOTE: AXIOMS OF ADAPTIVITY: RATE OPTIMALITY OF ADAPTIVE ALGORITHMS WITH SEPARATE MARKING <i>Carsten Carstensen, Hella Rabus</i></p> <p>7491 ALTERNATIVE TO RETURN -MAPPING ALGORITHM FOR COMPUTING PLASTIC STRAIN. APPLICATION TO DILATANT MATERIALS. <i>Siegfried Maiolino</i></p> <p>9839 MIXED LEAST-SQUARES FINITE ELEMENT FORMULATIONS FOR HYPERELASTICITY <i>Alexander Schwarz, Maximilian Igelbüscher, Jörg Schröder</i></p> <p>6490 L2 BEST-APPROXIMATION OF THE ELASTIC STRESS IN THE ARNOLD-WINTHER FEM <i>Carsten Carstensen, Dietmar Gallistl, Mira Schedensack</i></p>	<p>Danae</p>
<p>Wednesday, June 8 8:30-10:30</p> <p>CS 500 - 2: HIGH PERFORMANCE COMPUTING</p> <p><i>Chair:</i> Victor Demidovich</p> <p>11986 APPLICATION THE SPARSE MATRIX METHOD TO CALCULATE THE METAL ELASTIC STRESS-STRAIN STATE, USING THE FINITE ELEMENT METHOD <i>Inna Barankova, Uliana Mikhailova, Victor Demidovich</i></p> <p>11267 PARALLEL BOUNDARY ELEMENT FORMULATION FOR 2D MICROFLUIDIC PARTICULATE FLOW FOR MULTI-THREADED ARCHITECTURES <i>Süleyman D. Öner, Ali Karakuş, Barbaros Çetin, Besim Baranoğlu</i></p> <p>11627 HIGH ORDER DISCONTINUOUS GALERKIN COMPUTATIONS ON NUMA ARCHITECTURES <i>Vincent Bertrand, Jonathan Lambrechts, Jean-François Remacle, Axel Modave, Koen Hillewaert</i></p> <p>6151 PERFORMANCE AND SCALABILITY OF FETI METHODS FOR HETEROGENEOUS DYNAMIC PROBLEMS WITH DIFFERENT COARSE-GRIDS <i>Michael Leistner, Alejandro Cosimo, Daniel Rixen</i></p> <p>8496 IRREGULAR SHAPED PARTICLES FOR DEM HIGH PERFORMANCE ALGORITHMS <i>Eva Siegmann, Charles Radeke, Gundolf Haase, Johannes G. Khinast</i></p> <p>4638 PARALLEL AND VECTORIZED CODE FOR CSEM SURVEYS IN GEOPHYSICS: AN EDGE-BASED APPROACH <i>Octavio Castillo Reyes, Josep de la Puente, Hélène Barucq, Julien Diaz, José María Cela</i></p>	<p>Minos South</p>	<p>Wednesday, June 8 8:30-10:30</p> <p>MS 714 - 1: STRENGTH, FATIGUE AND STABILITY OF COMPOSITE STRUCTURES</p> <p><i>MS Organizers:</i> Raimund Rolfes, Martin Ruess, Kai-Uwe Schröder <i>Chair:</i> Martin Ruess, Raimund Rolfes</p> <p>11175 MICROMECHANICAL AND MEAN-FIELD MODELING OF LONG FIBER REINFORCED POLYMER STRUCTURES WITH LOCAL CONTINUOUS FIBER REINFORCEMENTS <i>Thomas Böhlke, Robert Bertoli, Bartel Brylka, Fabian Buck, Loredana Kehler, Viktor Müller, Konstantin Priesnitz, Malte Schemmann</i></p> <p>4807 UTILIZATION OF LAMINATION PARAMETERS FOR FAST PROBABILISTIC ANALYSIS OF THICK COMPOSITE STRUCTURES <i>Benedikt Kriegesmann</i></p> <p>9898 IDENTIFICATION OF ESSENTIAL IMPERFECTION PATTERNS FOR AXIALLY COMPRESSED COMPOSITE CYLINDRICAL SHELLS <i>Alexander Meurer, Christian Gerendt, Raimund Rolfes</i></p> <p>8005 ROBUST INTEGRAL COMPOSITE AIRCRAFT STRUCTURES <i>Tamas Havar</i></p> <p>8001 REFINED 2D FINITE ELEMENTS FOR COMPOSITE PLATES AND SHELLS ACCOUNTING FOR HYDROTHERMAL EFFECTS <i>Maria Cinefra, Guohong Li, Marco Petrolo, Erasmo Carrera</i></p>	<p>Europa</p>
<p>Wednesday, June 8 8:30-10:30</p>	<p>Leda</p>	<p>Wednesday, June 8 8:30-10:30</p> <p>MS 1001 - 5: STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION</p> <p><i>MS Organizers:</i> J.F. Aguilar Madeira, Helder C. Rodrigues <i>Chair:</i> Jacob Oest</p> <p>7644 LATIN HYPERCUBE SAMPLING BASED ON ADAPTIVE ORTHOGONAL DECOMPOSITION <i>Dirk Roos</i></p> <p>7645 A BENCHMARK OF CONTEMPORARY METAMODELING ALGORITHMS <i>Can Bogoclù, Dirk Roos</i></p>	

DAY 3 – WEDNESDAY, JUNE 8

7643	A NEW OPTIMIZED ANISOTROPIC MOVING LEAST SQUARES SURROGATE MODEL WITH MAXIMIZED PROGNOSIS <i>Kevin Cremanns, Dirk Roos</i>	10657	INFLUENCE OF FIBER ARCHITECTURE AND PERICARDIAL BOUNDARY CONDITIONS ON CARDIAC MECHANICS SIMULATIONS <i>Martin R. Pfaller, Andreas Nagler, Julia M. Hörmann, Martina Weigl, Cristóbal Bertoglio, Wolfgang A. Wall</i>
7092	ON THE CONSIDERATION OF UNCERTAINTY IN DESIGN: OPTIMIZATION – RELIABILITY – ROBUSTNESS <i>Nicolas Lelièvre, Pierre Beaurepaire, Cécile Matrand, Nicolas Gayton, Abdelkader Ostmane</i>	7578	PATIENT SPECIFIC STRESS ANALYSIS AND INFARCT ZONE DETECTION IN LBBB PATIENTS <i>Sareh Behdadfar, Laurent Navarro, Joakim Sundnes, Molly Maleckar, Stéphane Avril</i>
10063	A SUPERSTRUCTURE-BASED OPTIMIZATION APPROACH FOR BUILDING SPATIAL TOPOLOGIES <i>Koen van der Blom, Sjonne Boonstra, Hèrm Hofmeyer, Michael Emmerich</i>		

Wednesday, June 8	Athena
8:30-10:30	

MS 504 - 1: NUMERICAL METHODS AND TOOLS FOR KEY EXASCALE COMPUTING CHALLENGES IN ENGINEERING AND APPLIED SCIENCES
<i>MS Organizers: Eugenio Oñate, Manolis Papadrakakis, Peter Wriggers</i>
<i>Chair: Eugenio Oñate</i>
14678 EXTREMELY LARGE WIND SIMULATION OVER BARCELONA CITY <i>Pooyan Dadvand, Abel Coll, Riccardo Rossi, Cecilia Soriano, Eugenio Oñate</i>
11500 EVALUATION OF SPARSE LINEAR ALGEBRA OPERATIONS IN TRILINOS <i>Mohammad Siahatgar, Gabriele von Voigt</i>
10177 TOWARDS THE PETABYTE ERA: POST-PROCESSING AND VISUALIZATION FOR COMPUTATIONAL ENGINEERING <i>Miguel A. Pasenau, Javier Mora, Jorge Suit, Abel Coll</i>
14777 THE SIMULATION POWER OF PARTICLE-BASED METHODS FOR THE PARALLEL COMPUTATION OF A WIDE RANGE OF CHALLENGING ENGINEERING PROBLEMS <i>Bircan Avci, Jan-Philipp Fürstenau, Peter Wriggers</i>
5356 KINETIC MODELS AND ALGORITHMS FOR SOLUTION OF THE MAGNETOGASDYNAMIC PROBLEMS ON THE MODERN SUPERCOMPUTING SYSTEMS <i>Boris Chetverushkin, Nicola D'Ascenzo, A. Saveliev, Valeri Saveliev</i>

Wednesday, June 8	Artemis
8:30-10:30	

MS 113 - 3: MATHEMATICAL AND NUMERICAL MODELING OF THE HEART
<i>MS Organizers: Luca Dede', Luca Pavarino, Alfio Quarteroni</i>
<i>Chair: Luca Dede', Marco Paggi</i>
8360 MONODOMAIN/MONODOMAIN 3D/1D COUPLING FOR CARDIAC ELECTRIC PROPAGATION WITH DETAILED PURKINJE NETWORK <i>Christian Vergara, Simone Palamara, Matthias Lange, Alejandro Frangi, Alfio Quarteroni</i>
7148 COMPUTATIONAL MODELING OF CONTACT INTERACTIONS BETWEEN ACTIVE DEFORMABLE CELLS <i>Alessio Gizzii, Marco Paggi</i>
6064 THERMO-ELECTRO-MECHANICAL MODELING OF CARDIAC ARRHYTHMIAS <i>Christian Cherubini, Flavio Fenton, Simonetta Filippi, Alessio Gizzii, Alessandro Loppini</i>

Wednesday, June 8	Aphrodite
8:30-10:30	

MS 103 - 1: MECHANICS OF BIOLOGICAL TISSUES
<i>MS Organizers: Markus Böhl, Gerhard A. Holzapfel</i>
<i>Chair: Gerhard A. Holzapfel</i>
8166 ON THE MECHANICAL TESTING OF OOCYTES <i>Markus Böhl, Johannes Dittmann</i>
6955 INFLUENCE OF MUSCLE COMPRESSION ON DYNAMIC MUSCLE PERFORMANCE <i>Tobias Siebert, Norman Stutzig, Olaf Till, Christian Rode</i>
8900 SKELETAL MUSCLE MECHANICS: MODELLING THE INTERACTION BETWEEN THE MICROSTRUCTURE AND THE ENVIRONMENTAL MECHANICAL ENVELOPE <i>Christobel Gondwe, Paul N Watton, Xinshan Li</i>
11720 BIOMECHANICAL PROPERTIES OF CORNEAL EXTRACELLULAR MATRIX USING EXPERIMENTAL AND COMPUTATIONAL METHODS <i>Hamed Hatami-Marbini</i>
5245 COMPUTATIONAL MODELING OF THE ARTERIAL WALL BASED ON LAYER-SPECIFIC HISTOLOGICAL DATA <i>Tao Jin, Ilinca Stanciulescu</i>

Wednesday, June 8	Antigoni
8:30-10:30	

MS 806 - 4: MULTISCALE MODELLING OF MATERIALS AND STRUCTURES
<i>MS Organizers: Tadeusz Burczyński, Xavier Oliver, Maciej Pietrzyk, Alfredo Huespe</i>
<i>Chair: Rolf Mahnken</i>
8992 ON APPLICATION OF THE MESHLESS FINITE DIFFERENCE METHOD TO NUMERICAL HOMOGENIZATION <i>Irena Jaworska</i>
8750 CONCURRENT MULTISCALE MODELING OF CONCRETE MEMBERS USING FINITE ELEMENTS WITH HIGH ASPECT RATIO AND COUPLING FINITE ELEMENTS <i>Osvaldo L. Manzoli, Eduardo A. Rodrigues, Luís A.G. Bitencourt Jr, Túlio N. Bitencourt</i>
8594 ASYMPTOTIC HOMOGENIZATION OF HYDRO-THERMO-ELASTIC PROPERTIES OF FIBROUS NETWORKS <i>Emanuela Bosco, Ron H.J. Peerlings, Marc G.D. Geers</i>
8363 ANALYSIS OF PREDICTIVE CAPABILITIES OF MULTISCALE PHASE TRANSFORMATION MODELS BASED ON THE NUMERICAL SOLUTION OF HEAT TRANSFER AND DIFFUSION EQUATIONS <i>Monika Pernach, Krzysztof Bzowski, Lukasz Rauch, Maciej Pietrzyk</i>

DAY 3 – WEDNESDAY, JUNE 8

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| <p>6874 HYBRID FE/XFE FINITE ELEMENT MODEL FOR SIMULATION OF BRITTLE-DUCTILE FRACTURES IN DUAL-PHASE STEEL GRADES.
<i>Konrad Perzynski, Lukasz Madej</i></p> <p>9063 ISOGEOMETRIC DEFORMATION OF TWO DIMENSIONAL STATISTICALLY SIMILAR REPRESENTATIVE VOLUME ELEMENT BY USING T-SPLINES
<i>Daniel Bachniak, Lukasz Rauch, Maciej Pietrzak</i></p> | <p>8418 EQUATIONS OF MOTION FOR MECHANICAL SYSTEMS SUBJECT TO ACATASTATIC CONSTRAINTS
<i>Sotirios Natsiavas, Elias Paraskevopoulos</i></p> <p>8361 FINITE ELEMENT METAMODELING OF UNCERTAIN STRUCTURES
<i>Vasilis Dertimanis, Dimitris Giagopoulos, Eleni Chatzi</i></p> |
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Wednesday, June 8 8:30-10:30	Apollo East
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MS 801 - 3: MULTISCALE COMPUTATIONAL HOMOGENIZATION FOR BRIDGING SCALES IN THE MECHANICS AND PHYSICS OF COMPLEX MATERIALS

MS Organizers: Julien Yvonnet, Kenjiro Terada, Peter Wriggers, Marc Geers
Chair: Kenjiro Terada

- 6901** HOMOGENIZATION-BASED DESIGN AND OPTIMIZATION OF LUBRICATION INTERFACE TEXTURES
Abdullah Waseem, Ilker Ternizer, Junji Kato, Kenjiro Terada

- 9978** A NUMERICAL INCREMENTAL HOMOGENIZATION APPROACH TO CALCULATE ELASTOPLASTIC HETEROGENEOUS STRUCTURES
Trung Hieu Hoang, Mohamed Guerich, Julien Yvonnet

- 7449** PREDICTION OF INTRA- AND INTER-LAMINAR FAILURE OF LAMINATES USING NON-LOCAL DAMAGE-ENHANCED MEAN-FIELD HOMOGENIZATION SIMULATIONS
Ling Wu, Federico Sket, Laurent Adam, Issam Doghri, Ludovic Noels

- 8897** MULTIPHYSICS ANALYSIS OF HYGROTHERMAL AGEING OF GLASS/EPOXY COMPOSITES IN AN FE2 FRAMEWORK
I. B. C. M. Rocha, R. P. L. Nijssen, F. P. van der Meer, L. J. Sluys

- 10089** COMPUTATIONAL HOMOGENIZATION OF HETEROGENEOUS MATERIALS AT LARGE DEFORMATIONS
Saba Saeb, Paul Steinmann, Ali Javili

Wednesday, June 8 8:30-10:30	Apollo West
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MS 1308: MODELLING AND INVERSE METHODS IN NONLINEAR DYNAMICAL SYSTEMS

MS Organizers: Sotirios Natsiavas, Costas Papadimitriou, Eleni Chatzi, Dimitrios Giagopoulos
Chair: Dimitrios Giagopoulos

- 9925** MULTISCALE MODELLING OF DYNAMICAL SYSTEMS WITH FRICTION BETWEEN RANDOMLY ROUGH SURFACES
Carsten Proppe

- 8413** DYNAMICS OF MULTIBODY SYSTEMS SUBJECT TO UNILATERAL MOTION CONSTRAINTS USING A NEW NUMERICAL ALGORITHM FOR CONTACT DETECTION
Antonios Pournaras, Fotios Karaoulidis, Sotirios Natsiavas

- 4806** ON THE EXISTENCE OF NONLINEAR NORMAL MODES
George Haller

- 8597** PARAMETER ESTIMATION OF NONLINEAR LARGE SCALE SYSTEMS THROUGH STOCHASTIC METHODS AND MEASUREMENT OF ITS DYNAMIC RESPONSE
Dimitrios Giagopoulos, Alexandros Arailopoulos

Wednesday, June 8
8:30-10:30

Room 1

MS 409 - 1: CURRENT TRENDS IN MODELLING AND SIMULATION OF TURBULENT FLOWS

MS Organizers: Suad Jakirlić, ERCOFTAC SIG15
Chair: Suad Jakirlić

- 9720** KEYNOTE: ON THE UNIVERSALITY OF NEAR-WALL TURBULENCE IN THE PRESENCE OF ENERGETIC OUTER STRUCTURES
Michael Leschziner, Lionel Agostini

- 7179** WALL MODEL FOR DISCONTINUOUS GALERKIN IMPLICIT LARGE-EDDY SIMULATIONS
Ariane Frère, Koen Hillewaert, Philippe Chatelain, Grégoire Winckelmans

- 8430** A NEW METHOD OF A PRIORI TEST USING ANALYTICAL SOLUTION OF FLOWS AROUND ELLIPTICAL BURGERS VORTEX
Hiromichi Kobayashi

- 7465** LARGE-EDDY SIMULATION AND FAR FIELD ACOUSTICS OF A SUBSONIC HOT JET
Odile Labbé

- 8354** NUMERICAL ANALYSIS OF A STRAIGHT VORTEX TUBE IN A LAMINAR BOUNDARY-LAYER FLOW
Kazuo Matsuura

Wednesday, June 8
8:30-10:30

Room 2

STS 3 - 1: INNOVATIVE DESIGN OPTIMIZATION TOOLS LINKED TO INDUSTRIAL AERONAUTICAL APPLICATIONS: TARGETING GREENER PERFORMANCES

STS Organizers: Jacques Periaux, Gabriel Bugeda
Chair: Pedro Díez

- 14227** EFFICIENT METHODOLOGIES FOR ROBUST DESIGN OPTIMIZATION WITH LARGE NUMBER OF UNCERTAINTIES
Alberto Clarich

- 14228** ACCURACY ASSESSMENT OF GENERALIZED PARAMETRIC SOLUTIONS FOR OPTIMIZATION AND UNCERTAINTY QUANTIFICATION
Pedro Díez, Sergio Zlotnik, Raquel García-Blanco

- 14239** ADJOINT METHODS FOR EFFICIENT OPTIMIZATION AND CONTROL IN CFD AND CAA
Nicolas Gauger

- 15521** COMBINING AN RBF-BASED MORPHER WITH CONTINUOUS ADJOINT FOR LOW-SPEED AERONAUTICAL OPTIMIZATION APPLICATIONS
Evangelos Papoutsis-Kiachagias, Matej Andrejasic, Stefano Porziani, Corrado Groth, David Erzen, Marco Evangelos Biancolini, Emiliano Costa, Kyriakos Giannakoglou

- 14247** A COOPERATIVE APPROACH TO MULTI-LEVEL MULTI-DISCIPLINARY AIRCRAFT OPTIMIZATION
Caslav Ilic, Mohammad bu-Zurayk

DAY 3 – WEDNESDAY, JUNE 8

<p>Wednesday, June 8 8:30-10:30</p>	Room 3	
		<p>MS 1207: COMPUTATIONAL SIMULATION OF SMART STRUCTURES AND MATERIALS</p> <p><i>MS Organizers:</i> Ruediger Schmidt, Kai-Uwe Schröder <i>Chair:</i> Kai-Uwe Schröder</p>
<p>10061 TRANSVERSE WAVE PROPAGATION IN A ONE-DIMENSIONAL STRUCTURE COUPLED TO ITS ELECTRICAL ANALOGUE: COMPARISON OF TRANSFER MATRIX MODELS <i>Boris Lossouarn, Mathieu Aucejo, Jean-François Deü</i></p> <p>12010 A NEW COMPUTATIONAL FRAMEWORK FOR LARGE STRAIN ELECTROMECHANICS <i>Antonio J. Gil, Rogelio Ortigosa</i></p> <p>10374 MODELING OF A LARGE SPACE STRUCTURE FOR THERMAL DEFORMATION COMPENSATION ANALYSIS <i>Kaori Shoji, Motofumi Usui, Daigoro Isobe</i></p> <p>10109 REDUNDANCY DISTRIBUTION AND ADAPTIVE STRUCTURES <i>Malte von Scheven, Ekkehard Ramm, Manfred Bischoff</i></p> <p>8188 A MULTIPHYSICS FINITE ELEMENT MODEL FOR FUNCTIONALLY GRADED MAGNETO-ELECTRO-ELASTIC STRUCTURES <i>Narasimha Rao Mekala, Rüdiger Schmidt, Kai-Uwe Schröder</i></p>	<p>6795 A STAGGERED PRESSURE CORRECTION SCHEME TO COMPUTE A COMPRESSIBLE FLOW WITH A TRAVELLING REACTIVE INTERFACE <i>Laura Gastaldo, Dionysios Grapsas, Raphaèle Herbin, Jean-Claude Latché</i></p> <p>4619 AN ADAPTIVE FIXED-MESH ALE METHOD FOR FREE SURFACE FLOWS <i>Joan Baiges, Ramon Codina, Ernesto Castillo, Arnau Pont</i></p>	
<p>Wednesday, June 8 8:30-10:30</p>	Room 7	
		<p>MS 114: COMPUTER MODELING OF BALANCE AND HEARING DISORDERS</p> <p><i>MS Organizers:</i> Nenad Filipovic, Thanos Bibas <i>Chair:</i> Tijana Djukic</p>
<p>10709 KEYNOTE: REAL TIME OTOCONIA PARTICLE TRACKING IN THE SIMPLIFIED SEMI-CIRCULAR CANAL <i>Tijana Djukic, Nenad Filipovic</i></p> <p>10756 MODELING OF FLUID-STRUCTURE INTERACTION OF THREE SEMI-CIRCULAR CANALS <i>Zarko Milosevic, Igor Saveljic, Dalibor Nikolic, Milos Radovic, Velibor Isailovic, Nenad Filipovic</i></p> <p>9007 ELECTRO-MECHANICAL COCHLEA MODEL <i>Milica Nikolic, Velibor Isailovic, Nenad Filipovic</i></p> <p>12102 AN EEG STUDY OF THE EFFECTS OF MUSIC STIMULATION ON EMOTIONAL VALENCE RESPONSE <i>Bojana Andjelkovic Cirkovic, Mirko Rosic, Aleksandar Peulic, Maja Colic, Nenad Filipovic</i></p> <p>8959 THE REALISTIC THREE-DIMENSIONAL MODEL OF THE MIDDLE AND INNER EAR <i>Velibor Isailovic, Athanasios Bibas, Antonis Sakellarios, Nikolaos Tachos, Milica Nikolic, Dalibor Nikolic, Igor Saveljic, Nenad Filipovic</i></p>		
<p>Wednesday, June 8 8:30-10:30</p>	Room 8	
		<p>MS 613: COMPUTATIONAL STRATEGIES FOR THE SIMULATION OF TURBULENT TRANSPORT AND MIXING IN THE NATURAL ENVIRONMENT</p> <p><i>MS Organizers:</i> Fotis Sotiropoulos, Peter J. Diamessis <i>Chair:</i> Fotis Sotiropoulos</p>
<p>CS 110 - 6: NUMERICAL MODELS IN BIOMECHANICS</p> <p><i>Chair:</i> Suvrana De</p> <p>9990 MODELING OF THERMOMECHANICAL DAMAGE OF ULTRASONICALLY ACTIVATED SOFT TISSUE <i>Rahul, Suvrana De</i></p> <p>8248 SHEAR WAVES IN DEFORMED ELASTIC MATERIALS <i>Adela Capilnasiu, Daniel Fovargue, Ondrej Holub, Ralph Sinkus, David Nordsletten</i></p> <p>10742 EFFECT OF PERIVASCULAR TISSUE ON INFLATION-EXTENSION BEHAVIOR OF ABDOMINAL AORTA <i>Tereza Voňáková, Lukáš Horný, Jan Veselý, Tomáš Adámek, Rudolf Žitný</i></p> <p>10966 EFFECT OF STERILIZATION ON MECHANICAL PROPERTIES OF BIOLOGICAL COMPOSITE <i>Jan Vesely, Hynek Chlup, Rudolf Zitny, Tomas Grus</i></p>	<p>8967 KEYNOTE: TRANSPORT AND MIXING DUE TO BREAKING INTERNAL GRAVITY WAVES ON SLOPES <i>Oliver Fringer, Robert Arthur</i></p> <p>10558 A SPECTRAL MULTIDOMAIN PENALTY METHOD MODEL FOR THE SIMULATION OF INTERNAL SOLITARY WAVE SHOALING AND BREAKING OVER GENTLE SLOPES <i>Sumedh Joshi, Greg Thomsen, Peter Diamessis, Gustavo Rivera-Rosario</i></p> <p>4738 FULLY COUPLED HYDRO-MORPHODYNAMICS MODELING OF THE MISSISSIPPI RIVER <i>Ali Khosronejad, Fotis Sotiropoulos</i></p> <p>4733 SIMULATING THE BOUNDARY LAYER BELOW INTERNAL SOLITARY WAVES: NUMERICAL CHALLENGES AND PHYSICAL PROCESSES <i>Marek Stastna, Sandhya Harnanan, Nancy Soontiens</i></p>	
<p>Wednesday, June 8 8:30-10:30</p>	Room 5	
		<p>CS 410 - 4: COMPUTATIONAL FLUID MECHANICS</p> <p><i>Chair:</i> Sergey Utyuzhnikov</p> <p>9832 DOMAIN DECOMPOSITION APPROACH FOR NEAR-WALL TURBULENCE MODELING <i>Sergey Utyuzhnikov</i></p> <p>6041 THE INLET AND OUTLET BOUNDARY PROBLEM WITH THE PREFERENCE OF MASS FLOW <i>Martin Kyncl, Jaroslav Pelant</i></p> <p>6625 POSTPROCESSING OF NON-LOCALLY CONSERVATIVE FLUX <i>Lars Hov Odsæter, Trond Kvamsdal, Mary Fanett Wheeler, Mats G. Larson</i></p>

DAY 3 – WEDNESDAY, JUNE 8

<p>5451 MULTISCALE GEOPHYSICAL SIMULATIONS: NESTING A LARGE EDDY SIMULATION WITHIN A REGIONAL OCEAN MODEL (SOMAR) WITH ADAPTIVE MESH REFINEMENT <i>Alberto Scotti, Vamsi Chalamalla, Edward Santilli, Sutanu Sarkar</i></p>	<p>Wednesday, June 8 8:30-10:30</p>	<p>Room 11</p>
<p>Wednesday, June 8 Room 9 8:30-10:30</p>		
<p>MS 1217 - 2: COMPUTATIONAL METHODS IN EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS <i>MS Organizers: Vagelis Plevris, Georgia Kremmyda, Yasin Fahjan Chair: Vagelis Plevris</i></p>		
<p>7958 BEAM DYNAMIC STRESSES INCREMENTS AFTER PARTIAL DECONSTRUCTION OF FOUNDATION <i>Vladimir Gordon, Olga Pilipenko, Timur Gasimov</i></p> <p>10373 MODELLING OF HINGES IN SEGMENTED TUNNELS <i>Gelacio Juárez-Luna, Enrique Tenorio-Montero</i></p> <p>5973 EFFECT OF SOIL SPATIAL VARIABILITY ON THE DYNAMIC BEHAVIOR OF A SLOPE <i>Michael Michael, Tamara Al-Bittar, Abdul-Hamid Soubra</i></p> <p>7922 BULK SOLITARY WAVES AS THE BOX TOOL FOR NON-DESTRUCTIVE EVALUATION <i>Alexander Samsonov, Irina Semenova, Olga Moskalyuk, Vladimir Yudin</i></p> <p>7129 THE INFLUENCE OF UNCERTAINTY OF DESIGN PARAMETERS ON DYNAMIC CHARACTERISTICS OF STRUCTURE WITH DAMPERS <i>Magdalena Lasecka-Plura, Roman Lewandowski</i></p> <p>7987 RELIABILITY OF SYSTEMS EQUIPPED WITH VISCOUS DAMPERS WITH VARIABLE PROPERTIES <i>Andrea Dall'Asta, Laura Ragni, Fabrizio Scorzese, Enrico Tubaldi</i></p>	<p>9318 A FINITE ELEMENT FLUID-STRUCTURE INTERACTION MODEL FOR PARTICLE SUSPENSIONS IN VISCOELASTIC FLOW <i>Yongxing Wang, Mark Walkley, Peter Jimack</i></p> <p>8680 ADVANCES IN GEOMETRICAL PARAMETRIZATION AND REDUCED ORDER MODELS AND METHODS FOR COMPUTATIONAL FLUID DYNAMICS PROBLEMS IN APPLIED SCIENCES AND ENGINEERING: OVERVIEW AND PERSPECTIVES <i>F.Salmoiragh, F.Ballarin, G.Corsi, A.Mola, M.Tezzele, G.Rozza</i></p> <p>4666 SIMULATION OF FLUID PENETRATION IN INKJET PRINTING PROCESSES <i>Simon Praetorius, Axel Voigt</i></p> <p>6808 SENSITIVITY STUDY OF THE NUMERICAL SETUP FOR AN AUTOMATIC OPTIMIZATION PROCEDURE FOR A HYDRAULIC MACHINE <i>Alexander Tismer, Markus Schlipf, Stefan Riedelbauch</i></p> <p>7786 NUMERICAL PREDICTION OF PRESSURE DROP AND LAMINAR INSTABILITIES IN FULLY-DEVELOPED FLOW IN A CLOSED COMPOUND CHANNEL <i>Jalusia Ferrari, Jhon Goulart, Sandi Souza</i></p>	<p>Room 11</p>
<p>Wednesday, June 8 Room 10 8:30-10:30</p>		
<p>MS 1220: DYNAMICS OF STRUCTURES SUBJECT TO SEISMIC EXCITATIONS <i>MS Organizers: Michel Géradin, Evtim Zahariev, Evangelos J. Sapountzakis Chair: Evtim Zahariev, Evangelos J. Sapountzakis</i></p> <p>10352 A FINITE ELEMENT APPROACH TO ANALYZE MOTION BEHAVIORS OF INDOOR NON-STRUCTURAL COMPONENTS OF BUILDINGS <i>Daigoro Isobe, Masato Katagiri, Takashi Fujiwara, Toshiki Miura</i></p> <p>8477 NONLINEAR DYNAMIC BEHAVIOUR OF BASE-ISOLATED BUILDINGS WITH THE FRICTION PENDULUM SYSTEM SUBJECTED TO NEAR-FAULT EARTHQUAKES <i>Fabio Mazza, Sandro Sisinno</i></p> <p>9085 ABSOLUTE FINITE ELEMENT COORDINATES IN THE DYNAMICS OF LARGE FLEXIBLE STRUCTURES <i>Evtim Zahariev</i></p> <p>11322 EQUIVALENT UNIAXIAL ACCELERogram FOR CSS-BASED ISOLATION SYSTEMS ASSESSMENT UNDER TWO-COMPONENTS SEISMIC EVENTS <i>Marco Furinghetti, Alberto Pavese</i></p> <p>10717 MODAL ANALYSIS OF A FRAME MODEL UNDER UNMEASURED SEISMIC INPUT <i>Claudio Valente, Vincenzo Sepe, Marco Di Pilla, Fabrizio Iezzi, Rossella Siano, Luigia Zuccarino</i></p>	<p>Wednesday, June 8 8:30-10:30</p>	<p>Room 12</p>
<p>MS 601: SHOCK WAVE-BOUNDARY LAYER INTERACTION AND ITS CONTROL <i>MS Organizers: Piotr Doerffer, George Barakos Chair: Piotr Doerffer, George Barakos</i></p>		
<p>11964 SHOCK WAVE BOUNDARY LAYER INTERACTION IN PROFILE CASCADES REPRESENTING ROTOR BLADINGS OF THE LAST STAGE OF LARGE OUTPUT STEAM TURBINES <i>Martin Luxa, David Simurda, Jaromír Přihoda, Jana Vachova</i></p> <p>10540 NUMERICAL SIMULATION OF TRANSONIC BUFFET AND ITS CONTROL USING TANGENTIAL JET BLOWING <i>Ksenia Abramova, Kamil Khairullin, Alexander Ryzhov, Vitaly Soudakov</i></p> <p>11845 ACTIVE FLOW CONTROL BY JET INJECTION ON SHOCK-BOUNDARY LAYER INTERACTION PHENOMENA <i>Takahiro Ukai, Hossein Zare-Behtash, Kinling Lo, Konstantinos Kontis</i></p> <p>11922 EXPERIMENTAL STUDY OF A TRANSITIONAL OBLIQUE SHOCK-WAVE / BOUNDARY LAYER INTERACTION <i>Reynald Bur, Pascal Molton</i></p> <p>12038 ANALYSIS OF EFFECTS OF SHAPE AND LOCATION OF MICRO-TURBULATORS ON UNSTEADY SHOCKWAVE - BOUNDARY LAYER INTERACTION IN TRANSONIC FLOW <i>Janusz Szajder, Tomasz Kwiatkowski</i></p> <p>11983 SHOCK WAVE BOUNDARY LAYER INTERACTION INVESTIGATION: CONTROL BY ROD VORTEX GENERATORS AND THEIR APPLICATION ON HELICOPTER ROTOR BLADES <i>Fernando Tejero Embuena, Piotr Doerffer, Paweł Flaszynski</i></p>		

DAY 3 – WEDNESDAY, JUNE 8

<p>Wednesday, June 8 8:30-10:30</p> <p>MS 307: ADVANCES IN FINITE ELEMENT METHODS FOR TETRAHEDRAL MESH COMPUTATIONS MS Organizers: Guglielmo Scovazzi, Antonio J. Gil, Micheal W. Gee Chair: Guglielmo Scovazzi</p> <p>11316 A SIMPLE LINEAR TETRAHEDRAL FINITE ELEMENT FOR INCOMPRESSIBLE SOLID DYNAMICS: A VARIATIONAL MULTISCALE APPROACH <i>Guglielmo Scovazzi, Xianyi Zeng, Simone Rossi</i></p> <p>8297 DESIGNING TETRAHEDRAL FINITE ELEMENTS WITH SMOOTH POLYNOMIAL INTERPOLATION <i>Stefanos-Aldo Papanicopoulos, Antonis Zervos</i></p> <p>11730 IMPLICIT INCOMPRESSIBLE ELASTODYNAMICS WITH LINEAR FINITE ELEMENTS <i>Simone Rossi, Nabil Abboud, Guglielmo Scovazzi</i></p> <p>10995 ADAPTIVE MESHING METHOD FOR TURBULENT FLOW SIMULATIONS <i>Laure Billon, Youssef Mesri, Elie Hachem</i></p> <p>11309 A FIRST ORDER HYPERBOLIC FRAMEWORK FOR LARGE STRAIN COMPUTATIONAL SOLID DYNAMICS: AN UPWIND FINITE VOLUME METHOD <i>Chun Hean Lee, Antonio J. Gil, Jibran Haider, Osama Ibrahim, Javier Bonet</i></p>	Room 15	<p>Wednesday, June 8 8:30-10:30</p> <p>MS 1007 - 2: ADDITIVE MANUFACTURING AND OPTIMIZATION MS Organizers: Ekkehard Ramm, Ole Sigmund, Pierre Duysinx, Wing Kam Liu Chair: Ekkehard Ramm, Claus B.W. Pedersen</p> <p>9250 OPTIMUM LAYOUT OF COMPONENTS INCLUDING CELLULAR MATERIALS USING A GENERALIZED DISCRETE MATERIAL OPTIMIZATION APPROACH <i>Pierre Duysinx, Maxime Collet, Eduardo Fernandez, Simon Bauduin, Michael Bruyneel</i></p> <p>10306 MULTI-SCALE TOPOLOGY OPTIMIZATION CONSIDERING MECHANICAL AND THERMAL STRESS FORces FOR ADDITIVE MANUFACTURING <i>Junji Kato, Shunsuke Nishizawa, Takashi Kyoya, Kenjiro Terada</i></p> <p>6404 STUDY OF TOPOLOGY OPTIMIZATION PARAMETERS AND SCAFFOLD STRUCTURES IN ADDITIVE MANUFACTURING <i>Alain Garaigordobil, Ruben Ansola, Estrella Vegueria</i></p> <p>14751 OBTAINING ULTRA-LIGHT AND HIGH-PERFORMANCE STRUCTURES USING TOPOLOGY OPTIMIZATION AND ADDITIVE MANUFACTURING <i>Ji-Hong Zhu, Wei-Hong Zhang</i></p> <p>7389 IMPROVING THE WORKFLOW FROM DESIGN TO PRODUCTION OF TOPOLOGICAL OPTIMIZED PARTS BY USING ADDITIVE MANUFACTURING <i>Simon Vermeir, Miguel Godino</i></p>	Room 18
<p>Wednesday, June 8 8:30-10:30</p> <p>CS 1300 - 2: UNCERTAINTY QUANTIFICATION AND ERROR ESTIMATION Chair: Paul Hauseux</p> <p>11370 EFFICIENT PROPAGATION OF UNCERTAINTY THROUGH AN INVERSE NON-LINEAR DEFORMATION MODEL OF SOFT TISSUE <i>Paul Hauseux, Jack S. Hale, Stéphane P. A. Bordas</i></p> <p>5569 INTRACOCHLEAR POTENTIAL PREDICTION ACCOUNTING FOR BONE CONDUCTIVITY UNCERTAINTY <i>Nerea Mangado, Jordi Pons-Prats, Mario Ceresa, Gabriel Bugeda, Miguel Á. González Ballester</i></p> <p>7799 FAILURE PROBABILITY OF A SYSTEM WITH COMMON CAUSE FAILURES BY MULTIVARIATE EXPONENTIAL DISTRIBUTION <i>Megumi Maruyama, Tetsushi Yuge, Shigeru Yanagi</i></p> <p>7622 THE UPLIFT CAPACITY OF HORIZONTAL PLATE ANCHORS IN SPATIALLY VARIABLE CLAY USING SPARSE POLYNOMIAL CHAOS EXPANSIONS <i>Tom Charlton, Mohamed Rouainia</i></p> <p>8559 FATIGUE RELIABILITY OF AGEING RAILWAY BRIDGES: FEASIBILITY OF PROBABILISTIC APPROACH <i>Nirosha D. Adasooriya</i></p>	Room 17	<p>Wednesday, June 8 8:30-10:30</p> <p>MS 907 - 1: REGULARIZED ENRICHED APPROXIMATIONS AND QUADRATURE FOR DISCONTINUITIES, SINGULARITIES AND CONTINUOUS-DISCONTINUOUS TRANSITION MS Organizers: Elena Benvenuti, Giulio Ventura, José M.A. César de Sá Chair: Giulio Ventura</p> <p>9492 KEYNOTE: APPLICATION OF THE DIFFERENCE POTENTIAL METHOD TO LINEAR ELASTIC FRACTURE MECHANICS PROBLEMS <i>Huw Woodward, Sergei Utyuzhnikov, Patrick Massin</i></p> <p>9460 CONTINUOUS MODEL FOR DUCTILE FRACTURE USING A PHASE-FIELD MODEL <i>Erfan Azinpour, Abel D. Santos, Jose Cesar de Sa</i></p> <p>7934 STABILIZING THE XFEM: EXTENSION TO FINITE DEFORMATIONS, INELASTIC MATERIAL BEHAVIOUR, MATERIAL INSTABILITIES AND MULTIFIELD PROBLEMS <i>Stefan Loehnert</i></p> <p>7672 G-THETA METHOD AND FAST MARCHING METHOD FOR THREE-DIMENSIONAL CRACK PROPAGATION <i>Matthieu Le Cren, Patrick Massin, Alexandre Martin, Nicolas Moës</i></p> <p>7771 ON NEW INTEGRATION METHODS FOR X-FEM IN SOLID MECHANICS PLASTICITY. <i>Alexandre Martin, Nunziante Valoroso, Patrick Massin</i></p>	Room 20

DAY 3 – WEDNESDAY, JUNE 8

Wednesday, June 8 8:30-10:30		Room 21
MS 404 - 3: SIMULATION OF ENVIRONMENTAL FLOWS		
	<i>MS Organizers:</i> Pablo Ortiz, Piotr K. Smolarkiewicz, Joanna Szmelter	
Chair:	Piotr K. Smolarkiewicz	
7463	HIGH ORDER ADAPTIVE METHODS FOR ENVIRONMENTAL FLUID DYNAMICS <i>Luca Bonaventura, Giovanni Tumolo</i>	
11635	STABILIZING/OPTIMIZING FLUVIAL-SHALLOW WATER SYSTEMS WITH DISCONTINUOUS GALERKIN METHODS <i>Craig Michoski, Clint Dawson, Maximilian Bremer, Ali Samii</i>	
4876	NUMERICAL INVESTIGATION OF 2-D BUOYANCY DRIVE FLOWS: LOCK EXCHANGE VS. OVERFLOWS <i>Kiran Bhaganagar, Manjure Nayamatullah</i>	
5981	PROJECTION-BASED MODEL REDUCTION FOR FINITE ELEMENT APPROXIMATION OF SHALLOW WATER FLOWS <i>Matthew Farthing, Alexander Lozovskiy, Christopher Kees</i>	
6611	NUMERICAL MODELLING OF INCIPIENT SEDIMENT TRANSPORT OF ELLIPSOIDAL PARTICLES <i>Rafael Bravo, Pablo Ortiz</i>	
Wednesday, June 8 8:30-10:50		Room 22
Olympiad - 1		
Chair:	Emmanuel Tromme	
16490	ON THE EQUIVALENT STATIC LOAD METHOD FOR THE STRUCTURAL OPTIMIZATION OF MECHANICAL SYSTEMS ACCOUNTING FOR MULTICOMPONENT-BASED CONSTRAINTS <i>Emmanuel Tromme, Valentin Sonnevile, James K. Guest, Olivier Brüls, Pierre Duysinx</i>	
16373	HIGH-ORDER ARBITRARY LAGRANGIAN EULERIAN ONE-STEP WENO FINITE VOLUME SCHEMES ON TETRAHEDRAL MESHES FOR CONSERVATIVE AND NONCONSERVATIVE HYPERBOLIC BALANCE LAWS <i>Walter Boscheri, Michael Dumbser</i>	
5812	INTEGRATION OF DESIGN AND ANALYSIS THROUGH BOUNDARY INTEGRAL EQUATIONS <i>Benjamin Marussig, Jürgen Zechner, Gernot Beer, Thomas-Peter Fries</i>	
Wednesday, June 8 8:30-10:30		Room 23
MS 1009 - 2: ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION		
	<i>MS Organizers:</i> Kyriakos C. Giannakoglou, Jens Dominik Mueller	
Chair:	Kyriakos C. Giannakoglou	
8006	SENSITIVITY ANALYSIS FOR FORCED RESPONSE IN TURBOMACHINERY USING AN ADJOINT HARMONIC BALANCE METHOD <i>Anna Engels-Putzka, Christian Frey</i>	
7761	ADJOINT SHAPE OPTIMISATION FOR SOLIDS REMOVAL FROM MULTIPHASE FLOW <i>Shenan Grossberg, Daniel Jarman, Mark Savill, Hrvoje Jasak, Gavin Tabor</i>	
9092	UNSTEADY ADJOINT TO THE CUT-CELL METHOD USING MESH ADAPTATION ON GPU'S <i>Konstantinos Samouchos, Stergios Katsanoulis, Kyriakos Giannakoglou</i>	
6428	A CODE-COUPLING APPROACH TO THE IMPLEMENTATION OF DISCRETE ADJOINT SOLVERS BASED ON AUTOMATIC DIFFERENTIATION <i>Jan Backhaus, Anna Engels-Putzka, Christian Frey</i>	
5687	ON THE CORRECT APPLICATION OF AD CHECKPOINTING TO ADJOINT MPI-PARALLEL PROGRAMS <i>Ala Taftaf, Laurent Hascoët</i>	

10:30-11:00
Coffee Break

DAY 3 – WEDNESDAY, JUNE 8

TECHNICAL SESSIONS

Wednesday, June 8 11:00-13:00	Zeus East
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MS 106 - 3: DIRECT AND INVERSE METHODS FOR CARDIOVASCULAR AND PULMONARY BIOMECHANICS

MS Organizers: Wolfgang A. Wall, C. Alberto Figueira, Marek Behr
Chair: Kenneth Jansen

- 7150** KEYNOTE: INVERSE CHARACTERIZATION OF REGIONAL, NONLINEAR AND ANISOTROPIC PROPERTIES OF ARTERIES
Stephane Avril, Chiara Bellini, Matthew R. Bersi, Paolo Di Achille, Katia Genovese, Jay D. Humphrey
- 11236** KEYNOTE: COMPREHENSIVE AND PATIENT-SPECIFIC COMPUTATIONAL LUNG MODELING AND A NOVEL VALIDATION APPROACH
Wolfgang A. Wall, Christian J. Roth, Anna Birzle, Lena Yoshihara
- 9622** STABILITY OF NUMERICAL SCHEMES FOR THE MULTI-DIMENSIONAL MODELLING OF 3D/0D AIRFLOWS AND BLOOD FLOWS
Celine Grandmont, Sébastien Martin
- 11257** AGILE BOUNDARY CONDITION MODEL DESIGN IN SIMULATED HAEMODYNAMICS
Christopher J Arthurs, Miguel S Vieira, Rostislav Khlebnikov, C Alberto Figueira
- 10840** IMAGE-BASED MULTISCALE, MULTIDOMAIN COMPUTATIONAL MODELLING OF PULMONARY BIOMECHANICS
Miguel Silva Vieira, Christopher J. Arthurs, Desmond Dillon-Murphy, Rostislav Khlebnikov, C. Alberto Figueira

Wednesday, June 8 11:00-13:00	Zeus West
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MS 112 - 4: ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBIOLOGY

MS Organizers: Christian J. Cyron, Sven Hirsch, Philippe Blijenga, Roland C. Aydin, Anne M. Robertson, Gerhard A. Holzapfel
Chair: Anne M. Robertson, Sven Hirsch

- 9438** THE ROLE OF BIOMECHANICAL FORCES IN INTRACRANIAL ANEURYSM GROWTH AND RUPTURE
Manekomba Roxane Diagbouga, Sandrine Morel, Vincent Braunersreuther, Esther Sutter, Marie-Luce Bochaton-Piallat, Philippe Blijenga, Brenda R. Kwak
- 8803** THE POTENTIAL ROLE OF LIPID ACCUMULATION IN INTRACRANIAL ARTERY ANEURYSM WALL DEGENERATION AND ITS RELATION TO THE HAEMODYNAMICS
Riikka Tulamo, Eliisa Ollikainen, Juan Cebral, Mika Niemelä, Anne Robertson, Juhana Frösen
- 8935** STAGNANT BLOOD FLOW IN CEREBRAL ANEURYSMS
Shin-ichiro Sugiyama, Makoto Ohta, Teiji Tominaga
- 7568** COMPUTATIONAL FLUID DYNAMICS TO EVALUATE SACULAR AORTIC DISEASE
Rodrigo Romarowski, Simone Morganti, Alessandro Veneziani, Ferdinando Auricchio
- 9305** ANEURYSM MORPHOLOGY AND FLOW VELOCITY CURVES
Hernán G. Morales, Odile Bonnefous, Olivier Brina, Vitor Mendes Pereira, Laurent Spelle, Jacques Moret

9338	EFFECTIVE REMODELING IN THE WALLS OF CEREBRAL ANEURYSMS <i>Anne Robertson, Xinjie Duane, Khaled Aziz, Juan Cebral</i>
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Wednesday, June 8 11:00-13:00	Zeus North
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MS 901 - 4: ISOGEOMETRIC METHODS

MS Organizers: Yuri Bazilevs, David J. Benson, Rene De Borst, Thomas J.R. Hughes, Trond Kvamsdal, Alessandro Reali, Giancarlo Sangalli, Clemens V. Verhoosel
Chair: Trond Kvamsdal

- 7097** ISOGEOMETRIC-BASED TOOLS TO SUPPORT CARDIOVASCULAR BIOMECHANICS RESEARCH
Mauro Ferraro, Ferdinando Auricchio, Michele Conti, Laura De Lorenzis, Simone Morganti, Alessandro Reali, Robert L. Taylor
- 12126** DOMAIN DECOMPOSITION SOLUTION SCHEMES FOR LARGE-SCALE IGA PROBLEMS
George Stavroulakis, Dimitris Tsapatis, Manolis Papadrakakis
- 11132** A NEW ROTATION-FREE ISOGEOMETRIC FINITE SHELL ELEMENT WITH DIFFERENT ROTATION CONDITIONS FOR BOUNDARIES AND PATCH INTERFACES
Thang X. Duong, Farshad Roohbakhshan, Roger A. Sauer
- 5343** AN INTERPOLATION-BASED FAST MULTIPOLE METHOD FOR HIGHER ORDER BOUNDARY ELEMENTS ON PARAMETRIC SURFACES
Jürgen Dölz, Helmut Harbrecht, Michael Peters
- 5814** LOCAL ENRICHMENT OF NURBS PATCHES USING A NON-INTRUSIVE COUPLING STRATEGY.
Robin Bouclier, Jean-Charles Passieux, Michel Salaun
- 11125** ISOGEOMETRIC HYDRODYNAMICS
Ido Akkerman

Wednesday, June 8 11:00-13:00	Minos East
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MS 1101 - 7: REDUCED BASIS, POD AND PGD MODEL ORDER REDUCTION TECHNIQUES

MS Organizers: Francisco Chinesta, Elías Cueto, Antonio Huerta, Pierre Ladeveze, Gianluigi Rozza
Chair: Elías Cueto

- 10498** THE EFFECT OF SYSTEM LEVEL MODEL ORDER REDUCTION IN (CONTACTING) FLEXIBLE MULTIBODY SIMULATION ON THE SIMULATION Timestep
Frank Naets, Martijn Vermaut, Wim Desmet
- 10699** TOWARDS A NON-INTRUSIVE PROPER GENERALIZED DECOMPOSITION SCHEME FOR MODEL ORDER REDUCTION
Xi Zou, Pedro Díez, Michele Conti, Ferdinando Auricchio
- 12062** A MODEL ORDER REDUCTION TECHNIQUE APPLIED TO MULTI-SCALE THERMO-MECHANIC PROBLEMS
Andrea Barbarulo, Ahmed Sridi, Romain Ruyssen, Hachmi Ben-dhia
- 15963** ON A REDUCED BASIS SMAGORINSKY TURBULENCE MODEL
Enrique Delgado Avila
- 7376** NONLINEAR MODEL ORDER REDUCTION WITH ADAPTIVE BASIS
Johannes Rutzmoser, Daniel Rixen

DAY 3 – WEDNESDAY, JUNE 8

<p>Wednesday, June 8</p> <p>11:00-13:00</p> <p>MS 403 - 1: PARTICLE-BASED METHODS IN FLUID MECHANICS</p> <p><i>MS Organizers:</i> Sergio Idelsohn, Eugenio Oñate <i>Chair:</i> Sergio Idelsohn, Eugenio Oñate</p> <hr/> <p>8341 KEYNOTE: A VARIATIONAL, FIC-BASED FORMULATION FOR PARTICLE FINITE ELEMENT METHODS STABILIZED WITH HIGH ORDER SPATIAL DERIVATIVES <i>Carlos Felippa, Eugenio Onate, Sergio Idelsohn</i></p> <p>8420 GENERALIZATION OF MESHFREE COMPACT SCHEMES AND THEIR APPLICATIONS <i>Tasuku Tamai, Seiichi Koshizuka</i></p> <p>5457 LARGE-SCALE PARTICLE SIMULATIONS FOR DEBRIS FLOWS USING DYNAMIC LOAD BALANCE WITH SPACE FILLING CURVES ON A GPU-RICH SUPERCOMPUTER <i>Satoru Tsuzuki, Takayuki Aoki</i></p> <p>6508 TOWARDS CFD BASED PROCESS MONITORING – RECURRENCE CFD <i>Stefan Pirker, Thomas Lichtenegger</i></p> <p>7161 DISCRETE GRADIENT THEOREM AND ELEMENT-BASED INTEGRATION IN MESHLESS METHODS <i>Guillaume Pierrot, Gabriel Fougeron</i></p>	<p>Minos North</p>	<p>Wednesday, June 8</p> <p>11:00-13:00</p> <p>MS 923 - 2: NOVEL DISCRETIZATION METHODS – MATHEMATICAL AND MECHANICAL ASPECTS</p> <p><i>MS Organizers:</i> Jörg Schröder, Peter Wriggers, Ferdinando Auricchio, Carsten Carstensen <i>Chair:</i> Jörg Schröder</p> <hr/> <p>5298 KEYNOTE: A SHELL ELEMENT FOR LAMINATED STRUCTURES WITH CONTINUOUS INTERLAMINAR SHEAR STRESSES <i>Friedrich Gruttmann, Werner Wagner, Gregor Knust</i></p> <p>11298 MODELING OF ROBUST MIXED FINITE ELEMENTS FOR ANISOTROPIC INCOMPRESSIBLE MATERIALS <i>Alex Kraus, Peter Wriggers, Ferdinando Auricchio, Jörg Schröder</i></p> <p>5842 A NOVEL FINITE ELEMENT FOR ANISOTROPY <i>Nils Viebahn, Jörg Schröder, Peter Wriggers, Daniel Balzani</i></p> <p>8016 TWO-DIMENSIONAL DISCONTINUOUS GALERKIN METHOD FOR SMALL AND LARGE DEFORMATIONS <i>Tobias Steiner, Peter Wriggers, Carsten Carstensen</i></p> <p>10524 INVESTIGATION OF ELASTO-PLASTIC FRACTURE BY A PHASE FIELD MODEL <i>Timo Noll, Charlotte Kuhn, Ralf Müller</i></p>	<p>Danae</p>
<p>Wednesday, June 8</p> <p>11:00-13:20</p> <p>MS 408 - 1: MANIPULATION AND CONTROL OF TURBULENT FLOW</p> <p><i>MS Organizers:</i> Markus Rütten, Christina Voß <i>Chair:</i> Markus Rütten, Christina Voß</p> <hr/> <p>7435 THE SENSITIVITY OF LAMINAR-TURBULENT TRANSITION TO TOLLMIEN-SCHLICHTING WAVE FREQUENCY <i>Amir Banari, Christian Janssen, Thomas Rung, Lars-Uwe Schrader, Jochen Marzi</i></p> <p>8282 NOVEL ACTUATOR FOR FLOW MANIPULATION BY FOCUSED ACOUSTIC WAVES <i>Christian Kiefer, Dara Feili, Helmut Seidel</i></p> <p>9478 AIR OUTLET DESIGN FOR A PASSIVELY DRIVEN HYBRID LAMINAR FLOW CONTROL SYSTEM <i>Udo Krause, Peter Kreuzer, Hubert Stuke</i></p>	<p>Minos South</p>	<p>Wednesday, June 8</p> <p>11:00-13:00</p> <p>MS 714 - 2: STRENGTH, FATIGUE AND STABILITY OF COMPOSITE STRUCTURES</p> <p><i>MS Organizers:</i> Raimund Rolfes, Martin Ruess, Kai-Uwe Schröder <i>Chair:</i> Kai-Uwe Schröder, Raimund Rolfes</p> <hr/> <p>8560 HCF DAMAGE MODEL FOR FATIGUE IN COMPOSITES <i>Lucia Gratiela Barbu, Xavier Martinez, Sergio Oller, Alex H. Barbat</i></p> <p>9458 VALIDATION AND CORRELATION OF AIRCRAFT COMPOSITE FUSELAGE STRUCTURE MODELS <i>W.J. Vankan, W.M. van den Brink, R. Maas</i></p> <p>4752 MODELING MODE I AND MODE II DELAMINATION IN CFRP LAMINATES <i>Jaan-Willem Simon, Daniel Höwer, Stefanie Reese</i></p> <p>5838 ON THE STRUCTURAL DESIGN OF IMPERFECTION SENSITIVE LAMINATED COMPOSITE SHELL STRUCTURES SUBJECTED TO AXIAL COMPRESSION <i>Linus Friedrich, Paweł Lyssakow, Garth Pearce, Martin Ruess, Chiara Bisagni, Kai-Uwe Schröder</i></p> <p>6237 STRENGTH AND WEIGHT EQUIVALENT SUBSTITUTION OF LARGE SANDWICH PANELS BY MONOLITHIC CFRP STRUCTURES <i>Martin Meindlhuber, Martin Schagerl</i></p> <p>7717 PREDICTION OF STRENGTH AND GLOBAL FAILURE BEHAVIOR OF COMPLEX JOINT CONFIGURATIONS IN COMPOSITES <i>Sven Scheffler, Aamir Dean, Raimund Rolfes</i></p>	<p>Europa</p>
<p>CS 310: CAD, CAM AND CAE</p> <p><i>Chair:</i> Stanislav Makhanov</p> <hr/> <p>4368 VECTOR FIELD GUIDED TOOL PATHS FOR FIVE-AXIS MACHINING <i>Stanislav Makhanov</i></p> <p>6558 AN 'A PRIORI' MODEL REDUCTION FOR ISOGEOMETRIC BOUNDARY ELEMENT METHOD <i>Shengze Li, Jon Trevelyan, Weihua Zhang, Xuanzhu Meng</i></p> <p>8693 RESEARCH OF DEFORMATION QUALITIES OF POROUS MATERIALS ENHANCING COMPUTER DESIGN OF WETSUIT <i>Irina Cherunova, Elena Sirota, Nikolai Kornev, Mathias Paschen, Sebastian Schreier, Tatyana Lesnikova, Pavel Cherunov</i></p> <p>10653 MATHEMATICAL MODELLING OF CITY AERODYNAMICS <i>Svetlana Valger, Natalya Fedorova, Alexander Fedorov</i></p>			

DAY 3 – WEDNESDAY, JUNE 8

<p>Wednesday, June 8 11:00-13:00</p> <p>MS 1001 - 6: STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION MS Organizers: J.F. Aguilar Madeira, Helder C. Rodrigues Chair: Koen van der Blom</p> <p>5930 KEYNOTE: ANALYSIS AND DESIGN OF REINFORCED CONCRETE STRUCTURES AS A TOPOLOGY OPTIMIZATION PROBLEM <i>Matteo Brugui</i></p> <p>5403 A METHOD FOR BI-DIRECTIONAL COUPLING OF STRUCTURE AND SYSTEM IN THE OPTIMISATION OF MULTI-FUNCTIONAL COMPONENTS <i>Ajit Panesar, Ian Ashcroft, Ricky Wildman, Richard Hague</i></p> <p>8578 OPTIMAL DESIGN OF SKELETAL STRUCTURES WITH BUCKLING CONSIDERATIONS USING NONLINEAR BEAM MODELING <i>Hazem Madah, Oded Amir</i></p> <p>9029 CURVATURE APPROXIMATION ON THREE-DIMENSIONAL FE-MESHS USING THE EMBEDDED WEINGARTEN MAP <i>Oliver Schmitt, Paul Steinmann</i></p> <p>8393 TWO-SCALE TOPOLOGY OPTIMIZATION METHOD FOR COMPOSITE PLATE WITH IN-PLANE UNIT CELLS <i>Shinnosuke Nishi, Kenjiro Terada, Junji Kato</i></p>	<p>Leda</p>	<p>Wednesday, June 8 11:00-13:00</p> <p>CS 830: COMPUTATIONAL NANOTECHNOLOGY Chair: Oleksandr Voskoboinikov</p> <p>5357 SIMULATION OF SUPPRESSION AND RESTORATION OF THE AHARONOV-BOHM-TYPE OSCILLATIONS FOR ELECTRONS AND HOLES IN SELF-ASSEMBLED ASYMMETRICAL INAS/GAAS QUANTUM RINGS <i>Oleksandr Voskoboinikov</i></p> <p>5112 NUMERICAL ANALYSIS ON THE MECHANICAL BEHAVIORS OF CARBON NANOTUBE NANOCOMPOSITES <i>Lu-Wen Zhang, K.M. Liew</i></p> <p>7929 EFFECT OF NANOSIZED ASPERITIES AT THE SURFACE OF A NANOHOLE <i>Mikhail Grekov, Aleksandra Vakaeva</i></p> <p>11385 NANODROPLET DEPINNING FROM NANOPARTICLE <i>Fong Yew Leong, Liu Qi, Utkur Mirsaidov</i></p> <p>9273 NANOSCALE PHASE FIELD MODELING OF TEMPERATURE- AND STRESS-INDUCED MARTENSITIC PHASE TRANSFORMATIONS <i>Valery Levitas</i></p>	<p>Artemis</p>
<p>Wednesday, June 8 11:00-13:00</p> <p>Athena</p> <p>MS 504 - 2: NUMERICAL METHODS AND TOOLS FOR KEY EXASCALE COMPUTING CHALLENGES IN ENGINEERING AND APPLIED SCIENCES MS Organizers: Eugenio Oñate, Manolis Papadrakakis, Peter Wriggers Chair: Peter Wriggers</p> <p>10615 ACCELERATING COMMERCIAL FEA SOFTWARE THROUGH ADVANCED COMPUTATIONAL TECHNOLOGIES <i>Vladimir Belsky</i></p> <p>12125 PARALLEL AND SCALABLE SOLUTION SCHEMES FOR METAHEURISTIC OPTIMIZATION ALGORITHMS CONSIDERING UNCERTAINTIES, IN THE CONTEXT OF STRUCTURAL ANALYSIS <i>George Stavroulakis, Dimitris Giovanis, Vissarion Papadopoulos, Manolis Papadrakakis</i></p> <p>7366 ERROR ANALYSIS AND QUANTIFICATION IN NEURON SIMULATIONS <i>Francesco Casalegno, Francesco Cremonesi, Stuart Yates, Felix Schürmann, Fabien Delalondre</i></p> <p>MS 810: CONSIDERING THE VERY SMALL SCALES IN COMPUTATIONAL MECHANICS: ATOMIC AND QUANTUM MECHANICS-BASED METHODS MS Organizers: Amelie Fau, Roger Sauer Chair: Amelie Fau</p> <p>11926 COMPUTATIONAL MULTISCALE MODELING OF ADHESIVE MICROSTRUCTURES <i>Janine Mergel, Roger Sauer</i></p> <p>6337 ON THE ADAPTIVE FINITE ELEMENT APPROACHES APPLIED TO PDES IN QUANTUM MECHANICS <i>Denis Davydov, Jean-Paul Pelteret, Toby D. Young, Paul Steinmann</i></p> <p>10983 FINITE ELEMENT APPROACH FOR QUANTUM COMPUTATIONS OF CRYSTAL STRUCTURES <i>Amelie Fau</i></p>		<p>Wednesday, June 8 11:00-13:00</p> <p>Aphrodite</p> <p>MS 103 - 2: MECHANICS OF BIOLOGICAL TISSUES MS Organizers: Markus Böhl, Gerhard A. Holzapfel Chair: Markus Böhl</p> <p>7656 SKIN SURFACE VIBRATIONS INDUCED BY CARDIOVASCULAR DYNAMICS: BIOMECHANICS OF MECHANICAL WAVE PROPAGATION THROUGH SOFT BIOLOGICAL TISSUES <i>Daniela Tommasin, Viviana Mancini, Annette Caenen, Simon Shaw, Abigail Swillens, Stephen E. Greenwald, Patrick Segers</i></p> <p>8939 THE EFFECT OF SMOOTH MUSCLE CONTRACTILITY ON ARTERIAL GROWTH AND REMODELLING <i>Stefan Lindstrom, Jonas Stålhandske, Anders Klarbring</i></p> <p>9120 LOADING-RATE DEPENDENT ARTICULAR CARTILAGE DAMAGE; EXPERIMENTAL DATA AND A NON-LOCAL DAMAGE MODEL <i>Corrinus van Donkelaar, Juan Párraga-Quiroga, Lorenza Henao-Murillo, Wouter Wilson, Keita Ito</i></p> <p>11025 LARGE SCALE PHASE FIELD MODEL OF FRACTURE AND CUTTING OF SOFT TISSUES <i>Vahid Ziaeifar, Jack S. Hale, Corrado Maurini, Stéphane P.A. Bordas</i></p> <p>11339 CELL NUCLEUS MEMBRANE MODELING THROUGH SHELL TANGENTIAL DIFFERENTIAL CALCULUS <i>Denis Aubry, Solenne Devereaux, Rachele Allena,</i></p> <p>7606 A PHASE-FIELD APPROACH TO MODEL FRACTURE OF ARTERIAL WALLS <i>Osman Gültkin, Hüsnü Dal, Gerhard A. Holzapfel</i></p>	

DAY 3 – WEDNESDAY, JUNE 8

<p>Wednesday, June 8 11:00-13:00</p> <p>MS 806 - 5: MULTISCALE MODELLING OF MATERIALS AND STRUCTURES</p> <p><i>MS Organizers:</i> Tadeusz Burczyński, Xavier Oliver, Maciej Pietrzyk, Alfredo Huespe <i>Chair:</i> Xavier Oliver</p> <p>9447 KEYNOTE: GENERATION OF GRAPHENE-LIKE ATOMS STRUCTURES BY MEANS OF MEMETIC ALGORITHMS <i>Tadeusz Burczyński, Adam Mrozek, Wacław Kuś</i></p> <p>11244 NUMERICAL TOOLS FOR MULTI-SCALE MATERIAL DESIGN AND STRUCTURAL TOPOLOGY OPTIMIZATION <i>Juan Cante, Alex Ferrer, Javier Oliver</i></p> <p>9937 MOLECULAR DYNAMICS/STATICS SIMULATION OF NI-AL NANOPARTICLES SINTERING <i>Marcin Maździarz, Jerzy Rojek, Szymon Nosewicz</i></p> <p>9027 MULTISCALE MODELS OF METALS BEHAVIOR AT THE HIGH-VELOCITY IMPACT AND UNDER THE HIGH-CURRENT ELECTRON IRRADIATION <i>Alexander Mayer, Vasiliy Krasnikov, Polina Mayer</i></p>	<p>Antigoni</p>	<p>Wednesday, June 8 11:00-13:00</p> <p>CS 450 - 1: NUMERICAL METHODS AND CONVERGENCE ACCELERATION IN CFD</p> <p><i>Chair:</i> Jan Nordström</p> <p>5408 IMPROVED DUAL TIME-STEPPING BY USING SECOND DERIVATIVES <i>Jan Nordström, Andrea Ruggiu</i></p> <p>4675 A POSITIVITY-PRESERVING, DEFECT-CORRECTION MULTIGRID METHOD FOR TURBULENT AND CHEMICALLY REACTING FLOWS <i>Mark Wasserman, Yair Mor-Yossef, J. Barry Greenberg</i></p> <p>4918 A MULTIGRID FORMULATION FOR FINITE DIFFERENCE METHODS ON SUMMATION-BY-PARTS FORM: AN INITIAL INVESTIGATION <i>Andrea Alessandro Ruggiu, Per Weinerfelt, Tomas Lundquist, Jan Nordström</i></p> <p>6872 PERFORMANCE IMPROVEMENT OF FLOW COMPUTATIONS WITH AN OVERSET-GRID METHOD INCLUDING BODY MOTIONS USING A FULL MULTIGRID METHOD <i>Kunihide Ohashi, Hiroshi Kobayashi</i></p> <p>7593 SOLVING LINEAR SYSTEMS WITH MULTIPLE RIGHT-HAND SIDES WITH GMRES : AN APPLICATION TO AIRCRAFT DESIGN <i>Aloïs Bissuel, Grégoire Allaire, Laurent Daumas, Frédéric Chalot, Michel Mallet</i></p> <p>7884 HIGH-ORDER EXPLICIT STAGGERED SCHEME FOR THE SHALLOW WATER EQUATIONS <i>Nicolas Therme, Raphaële Herbin, Jean-Claude Latché</i></p>	<p>Apollo West</p>
<p>Wednesday, June 8 11:00-13:00</p> <p>MS 801 - 4: MULTISCALE COMPUTATIONAL HOMOGENIZATION FOR BRIDGING SCALES IN THE MECHANICS AND PHYSICS OF COMPLEX MATERIALS</p> <p><i>MS Organizers:</i> Julien Yvonnet, Kenjiro Terada, Peter Wriggers, Marc Geers <i>Chair:</i> Julien Yvonnet</p> <p>11749 KEYNOTE: MULTISCALE MODELLING OF SOFT MATERIALS <i>Patrick Le Tallec</i></p> <p>10778 DISTRIBUTION-ENHANCED HOMOGENIZATION: APPLICATION TO DUCTILE FRACTURE IN DYNAMICALLY LOADED BCC TANTALUM <i>Coleman Alleman, Somnath Ghosh, D. J. Luscher, Curt Bronkhorst</i></p> <p>10882 HOMOGENIZATION OF STRAIN-CRYSTALLIZING RUBBER-LIKE MATERIALS <i>Reza Rastak, Christian Linder</i></p> <p>11352 HOMOGENIZATION METHOD FOR DESIGNING NOVEL ARCHITECTURED CELLULAR MATERIALS <i>Zheng-Dong Ma</i></p> <p>5007 A MULTI-SCALE MODELING METHOD FOR HETEROGENEOUS STRUCTURES WITHOUT SCALE SEPARATION USING A FILTER-BASED HOMOGENIZATION SCHEME. <i>Amen Tognevi, Mohamed Guerich, Julien Yvonnet</i></p>	<p>Apollo East</p>	<p>Wednesday, June 8 11:00-13:00</p> <p>MS 409 - 2: CURRENT TRENDS IN MODELLING AND SIMULATION OF TURBULENT FLOWS</p> <p><i>MS Organizers:</i> Suad Jakirlić, ERCOFAC SIG15 <i>Chair:</i> Suad Jakirlić</p> <p>11019 COMPARATIVE ASSESSMENT OF SOME POPULAR SCALE-RESOLVING MODELS BY RELEVANCE TO SEPARATING FLOW IN A 3D DIFFUSER <i>Suad Jakirlic, Gisa John-Putenvettil, Imdat Maden, Robert Maduta</i></p> <p>10243 COMPARISON OF TWO APPROACHES TO ACCELERATING SECONDARY TRANSITION TO TURBULENCE IN SEPARATED SHEAR LAYERS IN THE FRAMEWORK OF DELAYED DETACHED EDDY SIMULATION <i>Ekaterina Guseva, Andrey Garbaruk, Mikhail Strelets</i></p> <p>10023 ASSESSMENT OF RANS AND DES METHODS FOR THE AHMED BODY <i>Emmanuel Guilmeneau, Gan Bo Deng, Alban Leroyer, Patrick Queutey, Michel Visonneau, Jeroen Wackers</i></p> <p>12284 AN IMPROVED SYNTHETIC EDDY METHOD APPLIED TO INTERNAL PIPE FLOWS <i>Joshua Holgate, Alex Skillen, Alistair Revell, Tim Craft</i></p> <p>8792 A STRUCTURED-BASED MODEL FOR THE STUDY OF TURBULENT STATISTICS IN HOMOGENEOUS STABLY STRATIFIED FLOWS <i>Constantinos Panagiotou, Stavros Kassinos</i></p> <p>8973 ON THE APPLICATION OF MODERN TURBULENCE MODELS IN THE FLOW LAMINARIZATION PROBLEMS <i>Sergey Chernyshev, Aleksander Ivanov, Andrey Kiselev, Dmitriy Sboev, Leonid Teperin, Petr Vorotnikov, Valeriy Vozhdaev</i></p>	<p>Room 1</p>
<p>Wednesday, June 8 11:00-13:00</p>			

DAY 3 – WEDNESDAY, JUNE 8

<p>Wednesday, June 8 11:00-13:00</p> <p>Room 2</p>	<p>Wednesday, June 8 11:00-13:00</p> <p>Room 4</p>
<p>STS 3 - 2: INNOVATIVE DESIGN OPTIMIZATION TOOLS LINKED TO INDUSTRIAL AERONAUTICAL APPLICATIONS: TARGETING GREENER PERFORMANCES</p> <p><i>STS Organizers:</i> Jacques Periaux, Gabriel Bugeda <i>Chair:</i> Gabriel Bugeda</p> <p>14253 ACTIVE FLOW CONTROL TO DELAY HIGH-SPEED STALL: 2D FLUIDIC GURNEY OPTIMIZATION <i>Mauro Minervino, Domenico Quagliarella</i></p> <p>14269 SHAPE OPTIMIZATION FOR GREENER AIRCRAFT: THE DASSAULT AVIATION VISION AND PERSPECTIVES <i>Gilbert Roge, S. Kleinveld, X. Loyatho, L. Daumas</i></p> <p>14286 TWO OBJECTIVE OPTIMISATION OF NATURAL LAMINAR FLOW OF NATURAL LAMINAR AIRFOIL OPERATING WITH ACTIVE SHOCK CONTROL BUMP USING EAS AND GAMES STRATEGIES <i>Zhil Tang, Yongbin Chen, Jacques Periaux</i></p> <p>14287 CAD-BASED AERODYNAMIC SHAPE OPTIMIZATION USING GEOMETRY SURROGATE MODEL AND ADJOINT METHODS <i>Eusebio Valero</i></p> <p>16599 ACCURACY ASSESSMENT OF GENERALIZED PARAMETRIC SOLUTIONS FOR OPTIMIZATION AND UNCERTAINTY QUANTIFICATION <i>Gabriel Bugeda, Jordi Pons-Prats</i></p>	<p>CS 1200 - 3: STRUCTURAL DYNAMICS</p> <p><i>Chair:</i> Luis Mesquita</p> <p>12007 COMPUTATIONAL MODELLING OF COLD-FORMED STEEL SCREWED CONNECTIONS AT AMBIENT AND ELEVATED TEMPERATURES <i>Luis Mesquita, Rui Dias, Armandino Parente, Paulo Piloto</i></p> <p>16132 MONITORING AND ANALYSIS OF STRESS FIELD FOR ORTHOTROPIC STEEL DECK OF DASHENGGUAN YANGZTE RIVER BRIDGE <i>Ying Wang, Y.S. Song</i></p> <p>8173 MODELING OF DEFORMABLE CRASH BARRIERS FOR LUMPED MASS MODELS USING THE EXAMPLE OF NHTSA MDB <i>Michael Pabst, Lailong Song, Johannes Fender, Fabian Duddeck</i></p> <p>5779 RESEARCH ON HYSTERETIC BEHAVIORS OF A NEW SEPARATED SHOCK ABSORBER APPLIED IN RAILWAY BRIDGE <i>Aili Li, Ri Gao, Mingde Sun, Jilei Zhang</i></p> <p>12005 UNCERTAINTY OF MODELS IN INTELLIGENT SYSTEMS UNDER STOCHASTIC LOADING <i>Amalia Moutsopoulou, Georgios Stavroulakis, Tasos Pouliozos</i></p>
<p>Wednesday, June 8 11:00-13:00</p> <p>Room 3</p>	<p>Wednesday, June 8 11:00-13:00</p> <p>Room 5</p>
<p>MS 1203: THE MODELS AND INVESTIGATIONS METHODS OF DYNAMICS OF THE SOLIDS SYSTEMS WITH DRY FRICTION</p> <p><i>MS Organizers:</i> Alexey A. Kireenkov, Alexander V. Karapetyan <i>Chair:</i> Alexey A. Kireenkov</p> <p>9248 ABOUT DYNAMICS OF A SYMMETRIC SOLIDS IN THE CASE OF COMBINED KINEMATICS <i>Alexey Kireenkov</i></p> <p>11184 TESTING, SIMULATING AND UNDERSTANDING UNDER-PLATFORM DAMPER DYNAMICS <i>Chiara Gastaldi, Muzio M. Gola</i></p> <p>8756 THE MODEL AND INVESTIGATION OF DYNAMICS OF THE SOLID SYSTEM WITH TWO MASSIVE ECCENTRICS ON A ROUGH PLANE <i>Sergey Semendyaev, Alexey Tsyanov</i></p> <p>7910 VIRTUAL TESTBENCH FOR THE OMNI WHEEL DYNAMICS SIMULATION: NEW CONTACT TRACKING ALGORITHM <i>Ivan Kosenko, Sergey Stepanov, Kirill Gerasimov, Mikhail Stavrovskiy</i></p> <p>9025 NON-REGULAR VEHICLE DYNAMICS. APPLICATION TO COLLISION <i>Ahmed Bouzar Essaidi, Bachir Menkouz, Moussa Haddad, Taha Chettibi</i></p>	<p>CS 410 - 5: COMPUTATIONAL FLUID MECHANICS</p> <p><i>Chair:</i> Bulent Duz</p> <p>10351 NUMERICAL SIMULATION OF NONLINEAR FREE SURFACE WATER WAVES USING A COUPLED POTENTIAL FLOW-URANS/VOF APPROACH <i>Bulent Duz, Tim Bunnik, Geert Kapsenberg</i></p> <p>5578 SURFACE-FORCES ON DEFORMING GEOMETRIES USING VORTEX METHODS AND BRINKMAN PENALIZATION <i>Siddhartha Verma, Gabriele Abbati, Petros Koumoutsakos</i></p> <p>7719 BUDGET ANALYSIS OF TURBULENT KINETIC ENERGY IN CORNER SEPARATION : RANS VS LES <i>Jean-François Monier, Feng Gao, Jérôme Boudet, Liang Shao, Lipeng Lu</i></p> <p>10393 APPLICATION OF THE BDDC METHOD FOR INCOMPRESSIBLE FLOWS <i>Martin Hanek, Jakub Šítek, Pavel Burda</i></p> <p>10753 AN EXPLICIT IMPLICIT SCHEME FOR CARTESIAN EMBEDDED BOUNDARY MESHES <i>Sandra May, Marsha Berger</i></p>
<p>Wednesday, June 8 11:00-13:00</p>	<p>Wednesday, June 8 11:00-13:00</p> <p>Room 7</p>
	<p>CS 720 - 1: COMPUTATIONAL MATERIALS SCIENCE</p> <p><i>Chair:</i> Viwanou Houkpatti</p> <p>5326 ON THE INFLUENCE OF THE INCLUSIONS' MORPHOLOGY ON THE ACCURACY OF THE PREDICTION OF REINFORCED COMPOSITES MECHANICAL BEHAVIOUR <i>Viwanou Houkpatti, Vladimir Salnikov, Philippe Karamian-Surville, Alexandre Vivet</i></p>

DAY 3 – WEDNESDAY, JUNE 8

- 11038** SIMULATION OF PRECIPITATION IN V-CONTAINING HSLA STEEL FOR THE STRENGTHENING ENHANCEMENT
Piyada Suwanpinij, Paolo Massaro, Annalisa Pola, Prasongk Srichareonchai
- 6821** NUMERICAL MODELLING OF THE EFFECT OF THERMAL RESIDUAL STRESS ON MECHANICAL PROPERTIES OF METAL-CERAMIC COMPOSITES
Witold Weglewski, Michał Basista, Kamil Bochenek
- 9895** PHASE-FIELD SIMULATION OF EUTECTIC SOLIDIFICATION USING NURBS-BASED ISOGEOMETRIC ANALYSIS
Resam Makvandi, Daniel Juhre, Omid Kazemi, Thorsten Halle
- 5593** MODELING THE DEFORMATION BEHAVIOR OF SMALL-SCALED SINGLE CRYSTALS
Edgar Husser, Swantje Bargmann
- 10861** STOCHASTIC FINITE ELEMENT APPROACH FOR MODELLING OF THE PHASE TRANSFORMATION AND RESIDUAL STRESS IN THE QUENCHING SINCE INTERCRITICAL TEMPERATURES IN MEDIUM CARBON STEELS
Carlos Arturo Bohorquez Avila

Wednesday, June 8 Room 8
11:00-13:00

MS 1201 - 1: COMPUTATIONAL STRUCTURAL DYNAMICS

MS Organizers: Evangelos J. Sapountzakis, Andreas E. Kampitsis
Chair: Evangelos J. Sapountzakis

- 4747** KEYNOTE: A FIBRE PLASTICITY MODEL FOR THE DYNAMIC ANALYSIS OF WIND TURBINE TOWERS
Andreas Kampitsis, Evangelos Sapountzakis
- 5811** HARMONICALLY FORCED NON-LINEAR VIBRATIONS OF PLATES MADE FROM ZENER MATERIAL
Roman Lewandowski, Przemysław Litewka
- 5117** FLEXURAL VIBRATION ANALYSIS OF GRAPHENE NANOPLAQUETS REINFORCED NANOCOMPOSITE BEAMS
Jie Yang, Chuang Feng
- 7521** DYNAMIC ANALYSIS OF SPECIAL CARS ON UNEVEN ROADS
Szymon Tengler
- 8083** WAVE PROPAGATION IN THIN PRETWISTED ANISOTROPIC STRIPS
Maloth Thirupathi, Mira Mitra, P J Guruprasad

Wednesday, June 8 Room 9
11:00-13:00

MS 1217 - 3: COMPUTATIONAL METHODS IN EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS

MS Organizers: Vagelis Plevris, Georgia Kremmyda, Yasin Fahjan
Chair: Vagelis Plevris

- 9633** COMPUTATIONAL EFFICIENCY IN NONLINEAR TIME-HISTORY ANALYSIS OF TALL BUILDING STRUCTURES
Ramazan Ayazoglu, Barış Erkus
- 8453** AN INVESTIGATION ON EFFECT OF SUBGRADE REACTION MODULUS OF SOIL ON NATURAL PERIOD OF LOW RISE BUILDINGS
Rafet Sisman, Abdurrahman Sahin
- 4612** SEISMIC BEHAVIOR INDICES OF OLD TYPE REINFORCED CONCRETE MEMBERS
Anthos Ioannou, Stavroula J. Pantazopoulou

- 10389** EFFECT OF THE SEISMIC EXCITATION'S INCIDENCE ANGLE ON THE NONLINEAR BEHAVIOR OF BASE ISOLATED BUILDINGS CONSIDERING POUNDING TO ADJACENT MOAT WALLS
Eftychia A. Mavronicola, Panayiotis C. Polycarpou, Petros Komodromos

- 6045** ENERGY-MOMENTUM METHOD FOR NONLINEAR DYNAMIC OF 2D COROTATIONAL BEAMS
Sophy Chhang, Mohammed Hjaj, Jean-Marc Battini, Carlo Sansour

Wednesday, June 8
11:00-13:20

Room 10

MS 414 - 1: NEW TRENDS IN NUMERICAL METHODS FOR MULTI-MATERIAL COMPRESSIBLE FLUID FLOWS

MS Organizers: Andy Barlow, Michael Dumbser, Raphaël Loubère, Pierre-Henri Maire, Rob Rieben, Mikhail Shashkov, François Vilar

Chair: Renaud Motte

- 10551** AN ENTROPY CONSERVATIVE AND DISSIPATIVE FINITE VOLUME METHOD FOR SOLVING GAS DYNAMICS EQUATIONS WRITTEN UNDER LAGRANGIAN UPDATED FORM
Pierre-Henri Maire, Bernard Rebourcet

- 12210** BUILDING A MORE EFFICIENT LAGRANGE-REMAP SCHEME THANKS TO PERFORMANCE MODELING
Thibault Gasc, Florian De Vuyst, Mathieu Peybernes, Raphaël Poncet, Renaud Motte

- 4725** A HIGH-ACCURATE SPH-RIEMANN-MOOD METHOD
Xesús Nogueira, Luis Ramírez, Stéphane Clain, Raphaël Loubère, Luis Cueto-Felgueroso, Ignasi Colominas

- 7031** 2D AXISYMMETRIC EXTENTION OF THE LAGRANGIAN CSTS (CONSERVATIVE SPACE- AND TIME-STAGGERED) HYDRODYNAMIC SCHEME
Alexis Marboeuf, Alexandra Claisse, Patrick Le Tallec, Antoine Llor

- 7453** SOME ACOUSTIC-TRANSPORT SPLITTING SCHEMES FOR TWO-PHASE COMPRESSIBLE FLOWS
Simon Peluchon, Gérard Gallice, Pierre-Henri Maire

- 11851** SLOPE LIMITING FOR TENSORS: BOUNDING BOX (BB) BASED MONOTONICITY AND SYMMETRY PRESERVING LIMITERS IN MULTI-DIMENSIONAL FLOWS.
Gabi Luttwak

- 5258** A DIRECT ARBITRARY-LAGRANGIAN-EULERIAN TVD FINITE VOLUME SCHEME ON NONCONFORMING MOVING UNSTRUCTURED MESHES: LOGICALLY STRAIGHT SLIP-LINES
Elena Gaburro, Michael Dumbser

Wednesday, June 8
11:00-13:00

Room 11

MS 410 - 2: COMPLEX FLUID FLOWS IN ENGINEERING: MODELLING, SIMULATION AND OPTIMIZATION

MS Organizers: Stefanie Elgeti, Philipp Knechtges
Chair: Stefanie Elgeti

- 9107** NUMERICAL SIMULATION OF HEAT TRANSFER IN AN OPEN ROTOR-STATOR SYSTEM
Alireza Rasekh, Peter Sergeant, Jan Vierendeels

- 8631** COMPARATIVE STUDY OF GRANULAR SOIL MODELS USING PARTICLE AND MESH-BASED SCHEMES
Wiktor Ricarda Wriggers, Antonia Larese, Svenja Völkner, Eugenio Oñate, Thomas Rung

DAY 3 – WEDNESDAY, JUNE 8

- 12019** MATHEMATICAL MODELLING OF BIOMASS GASIFICATION IN A SMALL FIXED BED REACTOR
Zbigniew Buliński, Tomasz Krysiński, Sebastian Werle, Łukasz Ziolkowski

- 5911** TOPOLOGY OPTIMIZATION FOR FLUID FLOW EMPLOYING LOCAL OPTIMALITY CRITERIA
Philip Sarstedt, Gerhard Kachel, Jörg Ettrich, Karl Bühler

- 10678** VALIDATION AND VERIFICATION OF A 2D LATTICE BOLTZMANN SOLVER FOR INCOMPRESSIBLE FLUID FLOW
Tamás István Józsa, Máté Szőke, Tom-Robin Teschner, László Kónözsy, Irene Moultsas

- 10992** MODELING OF NON-NEWTONIAN MULTIPHASE FLOW USING ADAPTIVE STABILIZED FINITE ELEMENT METHOD
Elie Hachem, Stephanie Riber, Mehdi Khaloufi, Youssef Mesri, Rudy Valette

Wednesday, June 8 **Room 12**
11:00-13:00

MS 1003 - 1: ADVANCES IN DESIGN OPTIMIZATION OF STRUCTURES AND MATERIALS

MS Organizers: Zhen Luo, Zhan Kang

Chair: Zhan Kang, Zhen Luo

- 7802** AN IMPROVED LEVEL SET METHOD FOR TOPOLOGY OPTIMIZATION BASED ON TOPOLOGICAL SENSITIVITY ANALYSIS
Tao Wu, Yang Zhang, Jirui Lin, Yansong Zhao, Wenjiao Bian

- 5376** SHAPE OPTIMIZATION OF GRAPHENE SHEETS FOR MAXIMUM FUNDAMENTAL FREQUENCY
Jin-Xing Shi, Masatoshi Shimoda

- 6839** A LEVEL SET BASED MULTIPLE-TYPE BOUNDARY METHOD FOR STRUCTURAL TOPOLOGY OPTIMIZATION
Qi Xia, Tielin Shi, Michael Yu Wang

- 6855** CROSS-SECTION TOPOLOGY OPTIMIZATION OF TRUCK CRANE TELESCOPIC BOOM
Yongfeng Zheng, Youmin Hu, Bo Wu, Tielin Shi, Yanlei Li, Jikai Fan, Yingyi Qin

- 6547** TOPOLOGICAL DESIGN OF MECHANICAL METAMATERIALS WITH ADDITIVE MANUFACTURING
Zhen Luo, Hao Li

Wednesday, June 8 **Room 15**
11:00-13:00

MS 905 - 1: DISCONTINUOUS GALERKIN METHODS: NEW TRENDS AND APPLICATIONS

MS Organizers: Sonia Fernández-Méndez, Nicoletta Franchina

Chair: Sonia Fernández-Méndez, Nicoletta Franchina

- 9074** KEYNOTE: A FULLY DISCRETE ADJOINT DISCONTINUOUS GALERKIN METHOD FOR PDE-CONSTRAINED TIME-PERIODIC OPTIMIZATION
Per-Olof Persson, Matthew Zahr

- 7607** A MULTIPLE REFERENCE-FRAME FORMULATION FOR THE DISCONTINUOUS GALERKIN METHOD
Jean-Sébastien Cagnone, Koen Hillewaert

- 8888** HYBRID PARALLELIZATION OF MODAL-NODAL TRANSFORMATIONS FOR HIGH ORDER DISCONTINUOUS GALERKIN METHOD
Nikhil Anand, Harald Klimach, Sabine Roller

- 8997** ANALYSIS OF THE DISCONTINUOUS GALERKIN METHOD FOR COMPRESSIBLE FLOW IN THE STEADY AND UNSTEADY LOW MACH REGIME
Simon Delmas, Vincent Perrier

Wednesday, June 8 **Room 17**
11:00-13:00

CS 1300 - 3: UNCERTAINTY QUANTIFICATION AND ERROR ESTIMATION

Chair: Steffen Franke

- 9275** QUANTIFICATION OF SPATIAL VARIABILITY FOR TRANSVERSE ELASTIC MODULUS OF SPRUCE WOOD
Alireza Farajzadeh Moshtaghin, Steffen Franke, Thomas Keller, Anastasios Vassilopoulos

- 8718** MIASC: AN ADAPTIVE APPROACH TO UNCERTAINTY QUANTIFICATION IN DISCRETIZED PROBLEMS OF REDUCED REGULARITY - PART 2: APPLICATIONS IN BONE REMODELING AND ROUGH SURFACE CONTACT
Maximilian R. Bittens, Robert L. Gates, Udo Nackenhorst

MS 1222: INFLUENCE OF LIQUEFIEABLE SOIL ON SINGLE AND CLOSELY CLUSTERED STRUCTURES

MS Organizers: Nawawi Chouw, Rolly Orense, Tam Larkin

Chair: Nawawi Chouw

- 4517** NUMERICAL ANALYSES OF THE INFLUENCE OF STRUCTURAL SLENDERNESS ON THE SEISMIC RESPONSE OF SINGLE AND CLUSTERED STRUCTURES
Gonzalo Barrios, Tam Larkin, Nawawi Chouw

- 4575** EFFECT OF HIGHER MODES ON STRUCTURAL RESPONSE WITH NONLINEAR SOIL-FOUNDATION-STRUCTURE INTERACTION
Xiaoyang Qin, Nawawi Chouw, Tam Larkin

Wednesday, June 8 **Room 18**
11:00-13:00

MS 1007 - 3: ADDITIVE MANUFACTURING AND OPTIMIZATION

MS Organizers: Ekkehard Ramm, Ole Sigmund, Pierre Duysinx, Wing Kam Liu

Chair: Pierre Duysinx, Michael Stingl

- 5907** KEYNOTE: COMPUTER AIDED TECHNOLOGIES FOR ADDITIVE MANUFACTURING
Tor Dokken

- 11420** MICROSTRUCTURE PREDICTION OF ADDITIVE MANUFACTURING PROCESSES THROUGH THERMODYNAMICALLY CONSISTENT ANALYSIS
Wing Kam Liu, Jacob Smith, Wei Xiong, Jian Cao

- 11238** FIRST STEPS IN A PREDICTIVE MODEL FOR SURFACE VOID NUCLEATED FATIGUE
Orion Kafka, Wing Liu

- 9561** A NEW CONCURRENT MULTISCALE MODELING STRATEGY CHARACTERIZING MICROSTRUCTURAL EVOLUTION DURING THE LASER ENGINEERED NET SHAPING PROCESS
Stephen Lin, Jacob Smith, Wing Kam Liu, Gregory Wagner

DAY 3 – WEDNESDAY, JUNE 8

<p>Wednesday, June 8 11:00-13:00</p> <p>MS 907 - 2: REGULARIZED ENRICHED APPROXIMATIONS AND QUADRATURE FOR DISCONTINUITIES, SINGULARITIES AND CONTINUOUS-DISCONTINUOUS TRANSITION</p> <p><i>MS Organizers:</i> Elena Benvenuti, Giulio Ventura, José M.A. César de Sá <i>Chair:</i> Elena Benvenuti</p> <p>9126 ENRICHMENT-INDEPENDENT PENALTY STABILIZATION OF X-FEM <i>Giulio Ventura</i></p> <p>6999 COHESIVE BAND MODEL: A TRIAXIALITY-DEPENDENT COHESIVE MODEL FOR DAMAGE TO CRACK TRANSITION IN A NON-LOCAL IMPLICIT DISCONTINUOUS GALERKIN FRAMEWORK <i>Julien Leclerc, Ling Wu, Ludovic Noels, Van-Dung Nguyen</i></p> <p>6204 LOCAL ERROR ANALYSIS OF THE FINITE ELEMENT METHOD FOR ELLIPTIC PROBLEM WITH A SINGULAR SOURCE TERM <i>Astrid Decoene, Loïc Lacouture, Sébastien Martin, Bertrand Maury</i></p> <p>11072 WELL CONDITIONED AND OPTIMALLY CONVERGENT EXTENDED FINITE ELEMENTS AND VECTOR LEVEL SETS FOR THREE-DIMENSIONAL CRACK PROPAGATION <i>Konstantinos Agathos, Giulio Ventura, Eleni Chatzi, Stéphane P. A. Bordas</i></p>	<p>Room 20</p>	<p>Wednesday, June 8 11:00-13:00</p> <p>Olympiad - 2</p> <p><i>Chair:</i> Georgios Vogiatzis</p> <p>16292 MULTISCALE SIMULATIONS OF POLYMER-MATRIX NANOCOMPOSITES <i>Georgios Vogiatzis</i></p> <p>16436 ROCK MECHANICS, FAILURE PHENOMENA WITH PRE-EXISTING CRACKS AND INTERNAL FLUID FLOW THROUGH CRACKS <i>Mijo Nikolic</i></p> <p>16358 TOWARDS OPTIMAL DESIGN OF MULTISCALE NONLINEAR STRUCTURES AND REDUCED-ORDER MODELING APPROACHES <i>Liang Xia</i></p> <p>16410 LOW-DISSIPATION METHODS AND MODELS FOR THE SIMULATION OF TURBULENT SUBSONIC FLOW <i>Wybe Rozema, Arthur Veldman, Roel Verstappen, Johan Kok</i></p> <p>16293 NUMERICAL METHODS FOR THE YIELD DESIGN OF CIVIL ENGINEERING STRUCTURES <i>Jeremy Bleyer</i></p> <p>6874 HYBRID RCAFÉ MODEL FOR FRACTURE MODELLING IN MULTI-PHASE MATERIALS <i>Konrad Perzynski, Lukasz Madej</i></p>	<p>Room 22</p>
<p>Wednesday, June 8 11:00-13:00</p> <p>MS 404 - 4: SIMULATION OF ENVIRONMENTAL FLOWS</p> <p><i>MS Organizers:</i> Pablo Ortiz, Piotr K. Smolarkiewicz, Joanna Szmelter <i>Chair:</i> Luca Bonaventura</p> <p>7665 KEYNOTE: EFFICIENT TWO-DIMENSIONAL SIMULATION MODELS FOR HYDRAULIC AND MORPHODYNAMIC TRANSIENTS <i>Pilar Garcia-Navarro, Javier Murillo, Mario Morales-Hernandez, Carmelo Juez, Asier Lacasta</i></p> <p>6636 EFFICIENT DISCRETE APPROXIMATIONS OF DISPERSIVE WAVE MODELS FOR NEARSHORE HYDRODYNAMICS <i>Andrea Filippini, Maria Kazolea, Mario Ricchiuto</i></p> <p>8406 ADDRESSING THE CHALLENGES OF IMPLEMENTATION OF HIGH-ORDER FINITE-VOLUME SCHEMES FOR ATMOSPHERIC DYNAMICS ON UNSTRUCTURED MESHES <i>Panagiotis Tsoutsanis, Dimitris Drikakis</i></p> <p>6086 SHALLOW WATER AND HYDROSTATIC MODELS FOR SIMULATION OF WETTING-DRYING AREAS <i>Joanna Szmelter</i></p> <p>9793 A MESHLESS METHOD FOR SIMULATION OF PARTICLE-DRIVEN GRAVITY CURRENTS WITH OBSTACLES <i>Karel Kovářík, Jozef Mužík, Dana Sitányiová</i></p>	<p>Room 21</p>	<p>Wednesday, June 8 11:00-13:00</p> <p>MS 1009 - 3: ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION</p> <p><i>MS Organizers:</i> Kyriakos C. Giannakoglou, Jens Dominik Mueller <i>Chair:</i> Nicolas R. Gauger</p> <p>8169 KEYNOTE: A TWO-LEVEL HYBRID APPROACH FOR OPTIMAL ACTIVE FLOW CONTROL ON A THREE-ELEMENT AIRFOIL <i>Anil Nemili, Emre Özkaya, Nicolas R. Gauger, Felix Kramer, Frank Thiele</i></p> <p>9064 ASSESSING ADJOINT-DERIVED AERODYNAMIC SENSITIVITIES IN THE PRESENCE OF FLOW SEPARATION <i>Thomas Economou, Evangelos Papoutsis-Kiachagias, Ioannis Kavvadias, Nikolaos Magoulas, Carsten Othmer, Kyriakos Giannakoglou, Juan Alonso</i></p> <p>11263 A MIXED OPERATOR OVERLOADING AND SOURCE TRANSFORMATION APPROACH FOR ADJOINT CFD COMPUTATION <i>Zahrasadat Dastouri, Sinan Gezgin, Uwe Naumann</i></p> <p>6123 SPHERICITY: MESH OPTIMIZATION FOR ARBITRARY ELEMENT TOPOLOGY <i>Pavlos Alexias, Eugene De Villiers</i></p> <p>8801 STEADY & UNSTEADY CONTINUOUS ADJOINT METHOD USING A PSEUDO-COMPRESSIBILITY BLOCK COUPLED SOLVER IN OPENFOAM <i>Christos Vezyris, Evangelos Papoutsis-Kiachagias, Ioannis Kavvadias, Kyriakos Giannakoglou</i></p>	<p>Room 23</p>

13:00-14:30
Lunch Break

PLENARY LECTURES

Wednesday, June 8 14:30-16:45	Zeus
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Chair: Franco Brezzi

11438 GENERALIZED PARAMETRIC SOLUTIONS : A COMMODITY IN
SIMULATION - BASED ENGINEERING

Antonio Huerta

12459 DISCONTINUOUS SKELETAL METHODS IN COMPUTATIONAL
MECHANICS

Daniele A. Di Pietro, Alexandre Ern

11433 ISOGEOOMETRIC ANALYSIS: PAST, PRESENT, FUTURE

Thomas J.R. Hughes

16:45-17:15

Coffee Break

TECHNICAL SESSIONS

<p>Wednesday, June 8 17:15-19:15</p> <p>MS 113 - 4: MATHEMATICAL AND NUMERICAL MODELING OF THE HEART</p> <p><i>MS Organizers:</i> Luca Dede', Luca Pavarino, Alfio Quarteroni <i>Chair:</i> Luca Dede', Luca Pavarino</p> <p>8022 MODELLING CHALLENGES IN PERSONALISED LEFT-VENTRICULAR MECHANICS SIMULATIONS <i>Liya Asner, Myrianti Hadjicharalambous, Radomir Chabiniok, Jack Lee, David Nordsletten</i></p> <p>12006 PREDICTING ACUTE CARDIAC RESYNCHRONISATION THERAPY EFFECTS THROUGH PATIENT SPECIFIC MODELLING <i>Lauren Fovargue, Simone Rivolo, Jessica Webb, Sophie Giffard-Roisin, Simon Clairidge, Tiffany Patterson, Liya Asner, Thomas Jackson, Eric Kerfoot, David Nordsletten, Maxime Sermesant, Reza Razavi, Nicolas P. Smith, Jack Lee</i></p> <p>5304 EXPERIMENT-BASED PARAMETER ESTIMATION FOR 3D-0D COUPLED PATIENT-SPECIFIC CARDIOVASCULAR DYNAMICS MODELS <i>Marc Hirschvogel, Marina Bassilious, Lasse Jagschies, Stephen M. Wildhirt, Michael W. Gee</i></p> <p>10892 REDUCED ORDER MODELS FOR THE EFFICIENT SOLUTION OF NONLINEAR PARAMETRIZED MECHANICAL PROBLEMS ARISING IN CARDIAC SIMULATIONS <i>Diana Bonomi, Andrea Manzoni, Alfio Quarteroni</i></p>	<p>Zeus East - West</p>	<p>Wednesday, June 8 17:15-19:35</p> <p>MS 602 - 1: INNOVATIVE METHODS FOR FLUID-STRUCTURE-INTERACTION</p> <p><i>MS Organizers:</i> E. Harald van Brummelen, Roger Ohayon, Trond Kvamsdal <i>Chair:</i> E. Harald van Brummelen</p> <p>11007 KEYNOTE: COMPLEX-FLUID-SOLID INTERACTION BASED ON THE NAVIER-STOKES-CAHN-HILLIARD PHASE-FIELD EQUATIONS <i>Harald van Brummelen, Mahnaz Shokrpour Roudbari, Gertjan van Zwieten, Herman Wijshoff</i></p> <p>9232 GOAL-ORIENTED MESH ADAPTATION FOR MOVING MESH FSI PROBLEMS <i>Eléonore Gauci, Frédéric Alauzet, Alain Dervieux</i></p> <p>8663 HIGH RESOLUTION INTERFACE REPRESENTATION IN NUMERICAL FLUID STRUCTURE SIMULATIONS USING FINITE ELEMENT METHODS <i>Bärbel Holm, Johan Hoffman</i></p> <p>7107 AN AEROELASTIC ACTUATOR SECTOR METHOD FOR WIND TURBINES SIMULATION <i>Athanasios Vitsas, Johan Meyers</i></p> <p>11026 ARBITRARY HIGH ORDER TIME INTEGRATION WITH INTEGRAL DEFERRED CORRECTIONS APPLIED TO PARTITIONED FLUID-STRUCTURE INTERACTION <i>David Blom, Alexander van Zuijlen, Hester Bijl</i></p> <p>9451 A MONOLITHIC FLUID-STRUCTURE INTERACTION METHOD, APPLICATION TO A PISTON PROBLEM <i>Felix Ischinger, Martijn Anthonissen, Barry Koren</i></p>	<p>Minos East</p>
<p>Wednesday, June 8 17:15-19:15</p> <p>MS 901 - 5: ISOGEOMETRIC METHODS</p> <p><i>MS Organizers:</i> Yuri Bazilevs, David J. Benson, Rene De Borst, Thomas J.R. Hughes, Trond Kvamsdal, Alessandro Reali, Giancarlo Sangalli, Clemens V. Verhoosel <i>Chair:</i> Ekkehard Ramm</p> <p>11109 KEYNOTE: GOAL ORIENTED ADAPTIVE ISOGEOOMETRIC METHODS WITH APPLICATIONS TO POROUS MEDIA <i>Trond Kvamsdal, Mukesh Kumar, Yared Bekele, Eivind Fonn, Arne Morten Kvarving, Lars Hov Odsæter, Knut Morten Okstad</i></p> <p>10158 IDENTIFICATION OF MECHANICAL PROPERTIES USING IGA AND ISOGEOOMETRIC STEREOCORRELATION <i>John-Eric Dufour, François Hild, Stéphane Roux</i></p> <p>10698 STUDY OF B-SPLINES FINITE ELEMENT DISCRETIZATION OF PHYSICS-BASED PRECONDITIONING FOR FLUID MECHANICS MODELS <i>Emmanuel Franck, Ahmed Ratnani, Eric Sonnendrücker, Stefano Serra-Capizzano, Mariarosa Mazza</i></p> <p>10811 ISOGEOOMETRIC ANALYSIS OF DYNAMIC CRACK PROPAGATION BASED ON PHASE-FIELD MODELS <i>Knut Morten Okstad, Trond Kvamsdal, Arne Morten Kvarving</i></p> <p>10890 AN ISOGEOOMETRIC SOLID SHELL ELEMENT FOR LARGE STRAIN PROBLEMS <i>Pablo Antolin, Annalisa Buffa, Josef Kiendl, Marco Pingaro, Alessandro Reali, Giancarlo Sangalli</i></p>	<p>Zeus North</p>	<p>Wednesday, June 8 17:15-19:15</p> <p>STS 5: TRANSITION LOCATION EFFECT ON SHOCK WAVE BOUNDARY LAYER INTERACTION</p> <p><i>STS Organizers:</i> Piotr Doerffer, Paweł Flaszynski <i>Chair:</i> Paweł Flaszynski</p> <p>15080 TRANSITION LOCATION EFFECT ON SHOCK WAVE INDUCED SEPARATION <i>Piotr Doerffer Doerffer</i></p> <p>15070 AN EXPERIMENTAL AND NUMERICAL STUDY OF SHOCK BOUNDARY LAYER INTERACTION IN EXTERNAL AERODYNAMICS CONFIGURATIONS <i>Marianna Braza, Damien Szubert, Y. Hoarau, Flavien Billard</i></p> <p>15073 APPLICATION OF AIR JET VORTEX GENERATORS IN A HIGHLY LOADED TURBINE STATOR <i>Anna Petersen</i></p> <p>15624 LOAD CONTROL OF NATURAL-LAMINAR-FLOW WING VIA BOUNDARY LAYER CONTROL <i>Wieńczysław Stalewski, Janusz Sznajder</i></p> <p>15078 LAMINAR-TURBULENT TRANSITION EFFECT ON SHOCK WAVE BOUNDARY LAYER INTERACTION ON COMPRESSOR PROFILE <i>Paweł Flaszynski, Piotr Doerffer, R. Szwaba</i></p>	<p>Minos North</p>

DAY 3 – WEDNESDAY, JUNE 8

<p>Wednesday, June 8 17:15-19:15</p> <p>MS 112 - 5: ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBIOLGY <i>MS Organizers:</i> Christian J. Cyron, Sven Hirsch, Philippe Bijlenga, Roland C. Aydin, Anne M. Robertson, Gerhard A. Holzapfel <i>Chair:</i> Philippe Bijlenga, Sven Hirsch</p> <p>8275 COMPARISON OF CONTRAST AGENT TRANSPORT OBTAINED FROM CFD, 4D PC-MRI, AND DSA IN CEREBRAL ANEURYSMS <i>Vitaliy Rayz, Alireza Vali, Loic Boussel, Michael Lawton, David Saloner</i></p> <p>11949 SIMULATION OF FLOW DIVERSION IN CEREBRAL ANEURYSMS <i>A. Kazakidi, F. Drakopoulos, C. Sadasivan, N. Chrisochoides, J. Ekaterinaris, B. B. Lieber</i></p> <p>9205 TECHNIQUES TO INTEGRATE PATIENT-SPECIFIC SIMULATION OF ANEURYSMAL BLOOD FLOW INTO THE CLINICAL WORKFLOW <i>Gábor Závodszyk, Roland Joó-Kovács, György Paál, István Szikora</i></p> <p>8338 OPTIMAL INTERVAL OF TWO STRUT WIRES RELATIVE TO ANEURYSM INFLOW <i>Hitomi Anzai, Kazuhiro Watanabe, Makoto Ohta</i></p> <p>8683 DISTRIBUTION OF ENDOTHELIAL CELLS DOWNSTREAM OF A STENT STRUT: AN IN-VITRO STUDY <i>Makoto Ohta, Tomohito Watanabe, Xiaobo Han, Hisatoshi Kobayashi, Hitomi Anzai</i></p> <p>8694 DEVELOPMENT OF IN-VITRO MODEL FOR EVALUATION OF ENDOLEAK AND MIGRATION ON STENT GRAFT <i>Taihei Onishi, Yujie Li, Shunsaku Oppata, Tadashi Idei, Makoto Ohta</i></p>	<p>Minos South</p>	<p>Wednesday, June 8 17:15-19:15</p> <p>CS 630 - 1: SIMULATION OF FLUID-STRUCTURE INTERACTION <i>Chair:</i> Joris Degroote</p> <p>8622 QUASI-NEWTON TECHNIQUES FOR THE PARTITIONED SOLUTION OF COUPLED PROBLEMS <i>Joris Degroote, Robby Haelterman, Jan Vierendeels</i></p> <p>8788 NUMERICAL SIMULATION OF FLUID-STRUCTURE INTERACTION PROBLEMS BY A COUPLED SPH-FEM APPROACH <i>Jessica Stasch, Bircan Avci, Peter Wriggers</i></p> <p>8826 MODELING OF SUBMERGED CABLES USING FLEXIBLE MULTIBODY DYNAMICS <i>Alexander Held, Robert Seifried</i></p> <p>10824 EFFECT OF DISC GEOMETRY ON THE DYNAMIC STABILITY OF A DIRECT SPRING OPERATED PRESSURE RELIEF VALVE <i>István Erdődi, Csaba Hős</i></p> <p>5923 INVESTIGATION OF THE FLOW OVER AN OSCILLATING CYLINDER WITH A VERY LARGE EDDY SIMULATION MODEL <i>Anastasia Kondratyuk, Michael Schäfer, Awais Ali</i></p>	<p>Europa</p>
<p>Wednesday, June 8 17:15-19:15</p> <p>Danae</p>		<p>Wednesday, June 8 17:15-19:15</p> <p>Leda</p>	
<p>MS 923 - 3: NOVEL DISCRETIZATION METHODS – MATHEMATICAL AND MECHANICAL ASPECTS <i>MS Organizers:</i> Jörg Schröder, Peter Wriggers, Ferdinando Auricchio, Carsten Carstensen <i>Chair:</i> Jörg Schröder</p> <p>8092 A NOVEL HIGH-PERFORMANCE MIXED MEMBRANE FINITE ELEMENT FOR THE ANALYSIS OF ELASTOPLASTIC STRUCTURES <i>Nicola Antonio Nodari, Paolo Bisegna</i></p> <p>7619 DISCONTINUOUS GALERKIN METHOD WITH REDUCED INTEGRATION SCHEME FOR THE BOUNDARY TERMS IN ALMOST INCOMPRESSIBLE LINEAR ELASTICITY <i>Hamid Reza Bayat, Stephan Wulffinghoff, Stefanie Reese</i></p> <p>6876 REMARKS ON THE HELLINGER-REISSNER FINITE ELEMENT FORMULATIONS FOR ELASTO-PLASTICITY AT SMALL STRAINS <i>Maximilian Igelbücher, Jörg Schröder, Alexander Schwarz</i></p> <p>9079 MULTI-LEVEL HP-FEM: DYNAMIC DISCRETIZATIONS WITH ARBITRARY HANGING NODES FOR SOLID MECHANICS <i>Nils Zander, Davide D'Angella, Tino Bog, Stefan Kollmannsberger, Martin Ruess, Ernst Rank</i></p> <p>9973 ISOGEOMETRIC COLLOCATION FOR RATE-INDEPENDENT PLASTICITY <i>Frederik Fahrendorf, Laura De Lorenzis, Thomas J.R. Hughes</i></p>		<p>MS 1001 - 7: STRUCTURAL AND MULTIDISCIPLINARY OPTIMIZATION <i>MS Organizers:</i> J.F. Aguilar Madeira, Helder C. Rodrigues <i>Chair:</i> Filippo Menghini</p> <p>5874 OPTIMAL REINFORCEMENT OF MEMBRANE SHELLS <i>Anders Klarbring, Bo Torstenfelt, Peter Hansbo, Mats G Larson</i></p> <p>10062 A MIXED-INTEGER LINEAR PROGRAMMING APPROACH FOR GLOBAL DISCRETE SIZE OPTIMIZATION OF FRAME STRUCTURES <i>Roxane Van Mellaert, Kristo Mela, Teemu Tiainen, Markku Heinisuo, Geert Lombaert, Mattias Schevenels</i></p> <p>7623 MULTIDISCIPLINARY OPTIMIZATION BY SURROGATE MODELS: HANDLING EPISTEMIC UNCERTAINTIES BY POLYNOMIAL CHAOS EXPANSION <i>Sylvain Dubreuil, Nathalie Bartoli, Christian Gogu, Thierry Lefebvre</i></p> <p>8564 MINIMUM-COST TOPOLOGY AND SIZING OPTIMIZATION OF NONLINEAR VISCOUS DAMPERS FOR SEISMIC RETROFITTING OF 3-D FRAME STRUCTURES <i>Nicolo Pollini, Oren Lavan, Oded Amir</i></p> <p>5835 ON A NASH GAME FOR TOPOLOGY OPTIMIZATION UNDER LOAD-UNCERTAINTY – FINDING THE WORST LOAD <i>Carl-Johan Thore</i></p>	

<p>Wednesday, June 8 17:15-19:35</p> <p>MS 1102: VERIFICATION OF REDUCED MODELS IN COMPUTATIONAL MECHANICS</p> <p><i>MS Organizers:</i> Ludovic Chamoin, Pedro Diez, Fredrik Larsson, Kris Van der Zee <i>Chair:</i> Ludovic Chamoin</p> <p>6217 CERTIFIED MULTISCALE COMPUTATIONS BASED ON MSFEM AND PGD MODEL REDUCTION <i>Ludovic Chamoin, Frédéric Legoll</i></p> <p>10074 ERROR CONTROLLED REDUCED ORDER MODELING IN COMPUTATIONAL HOMOGENIZATION OF FLUID-SATURATED POROUS MEDIA <i>Fredrik Larsson, Ralf Jänicke, Kenneth Runesson</i></p> <p>8843 A POSTERIORI ERROR ESTIMATION FOR MULTISCALE COMPUTATIONS BASED ON MSFEM <i>Frédéric Legoll</i></p> <p>11200 ON THE CONTROL OF PGD REDUCED-ORDER APPROXIMATIONS: ERROR ESTIMATION AND ADAPTIVITY <i>Florent Pled, Ludovic Chamoin, Pierre-Eric Allier, Pierre Ladevèze</i></p> <p>9195 RELIABILITY AND COMPUTATIONAL EFFICIENCY IN REDUCED BASIS METHODS FOR COMPLEX NONAFFINE AND NONLINEAR PDES <i>Andrea Manzoni, Federico Negri</i></p> <p>9904 A PGD SOLVER FOR THE PARAMETRIC POWER FLOW PROBLEM: MODELING ELECTRIC GRIDS WITH ACCURACY ASSESSMENT AND CONTROL <i>Raquel García-Blanco, Pedro Díez, Domenico Borzacchiello, Francisco Chinesta</i></p> <p>11283 RESIDUAL-BASED VERIFICATION OF PGD REDUCED MODELS <i>Kenan Kergrene, Serge Prudhomme, Igor Mozolevski</i></p>	<p>Athena</p> <p>8165 A MULTIPHASE MODEL FOR THE NUMERICAL SIMULATION OF ICE-FORMATION IN SEA-WATER <i>Vanessa Covello, Antonella Abbà, Luca Bonaventura, Alessandro Della Rocca, Lorenzo Valdettaro</i></p> <p>8629 MODELLING MULTIPHASE AND COMPOSITIONAL FLOWS IN POROUS MEDIA USING A PARAMETRISED PR-EOS <i>Konstantinos Christou, Francisco B.S. Oliveira, Jefferson L.M.A. Gomes</i></p>
<p>Wednesday, June 8 17:15-19:15</p> <p>MS 103 - 3: MECHANICS OF BIOLOGICAL TISSUES</p> <p><i>MS Organizers:</i> Markus Böhl, Gerhard A. Holzapfel <i>Chair:</i> Jonas Stålhand</p> <p>8950 IN VIVO DEFORMATION ANALYSIS OF AORTIC WALLS BY TIME RESOLVED 3D ULTRASOUND <i>Christopher Blase, Andreas Wittek</i></p> <p>10869 IMPLEMENTATION OF AN EXPONENTIAL FIBER DISPERSION MODEL FOR EXCLUDING FIBERS UNDER COMPRESSION <i>Kewei Li, Gerhard Holzapfel</i></p> <p>11367 A 3D ELECTROMECHANICAL FEM-BASED MODEL FOR CARDIAC TISSUE <i>Minh Tuan Duong, Alexander Jung, Ralf Frotscher, Manfred Staat</i></p> <p>12407 A QUASI-INEXTENSIBLE ELEMENT FORMULATION FOR ANISOTROPIC CONTINUUM <i>Hüsnü Dał</i></p> <p>15038 CONSTITUTIVE MODELING OF ACTIVE ELECTRO-MECHANICS WITH DISTRIBUTED FIBER FOR ANISOTROPIC CARDIAC TISSUE <i>Alessio Gizzi, Anna Pandolfi, Marcello Vasta</i></p> <p>5742 A MICROSTRUCTURAL CONSTITUTIVE MODEL FOR SKELETAL MUSCLE TISSUE <i>Leonidas Spyrou, Kostas Danas</i></p>	<p>Aphrodite</p> <p>Wednesday, June 8 17:15-19:15</p> <p>MS 103 - 3: MECHANICS OF BIOLOGICAL TISSUES</p> <p><i>MS Organizers:</i> Markus Böhl, Gerhard A. Holzapfel <i>Chair:</i> Jonas Stålhand</p> <p>8950 IN VIVO DEFORMATION ANALYSIS OF AORTIC WALLS BY TIME RESOLVED 3D ULTRASOUND <i>Christopher Blase, Andreas Wittek</i></p> <p>10869 IMPLEMENTATION OF AN EXPONENTIAL FIBER DISPERSION MODEL FOR EXCLUDING FIBERS UNDER COMPRESSION <i>Kewei Li, Gerhard Holzapfel</i></p> <p>11367 A 3D ELECTROMECHANICAL FEM-BASED MODEL FOR CARDIAC TISSUE <i>Minh Tuan Duong, Alexander Jung, Ralf Frotscher, Manfred Staat</i></p> <p>12407 A QUASI-INEXTENSIBLE ELEMENT FORMULATION FOR ANISOTROPIC CONTINUUM <i>Hüsnü Dał</i></p> <p>15038 CONSTITUTIVE MODELING OF ACTIVE ELECTRO-MECHANICS WITH DISTRIBUTED FIBER FOR ANISOTROPIC CARDIAC TISSUE <i>Alessio Gizzi, Anna Pandolfi, Marcello Vasta</i></p> <p>5742 A MICROSTRUCTURAL CONSTITUTIVE MODEL FOR SKELETAL MUSCLE TISSUE <i>Leonidas Spyrou, Kostas Danas</i></p>
<p>Wednesday, June 8 17:15-19:15</p> <p>MS 405: COMPUTATIONAL MODELING OF MULTIPHASE FLOWS: ADVANCED METHODS, INTERFACE PHENOMENA AND ENVIRONMENTAL APPLICATIONS</p> <p><i>MS Organizers:</i> Adeline Montlaur, Santiago Arias Calderón, Martin Kronbichler <i>Chair:</i> Martin Kronbichler</p> <p>12203 A 3D CFD NUMERICAL STUDY OF THE BUBBLE GENERATION PROCESS INTO A BUBBLE T-JUNCTION GENERATOR AND ITS COMPARISON WITH EXPERIMENTAL DATA: PART I <i>Santiago Arias, Adeline Montlaur</i></p> <p>5966 A 3D CFD NUMERICAL STUDY OF THE BUBBLE GENERATION PROCESS INTO A BUBBLE T-JUNCTION GENERATOR AND ITS COMPARISON WITH EXPERIMENTAL DATA: PART II <i>Santiago Arias Calderón, Adeline Montlaur</i></p> <p>7296 ACCURATE MODELING OF MOVING CONTACT LINE IN TWO-PHASE IMMISCIBLE FLOWS <i>Hanna Holmgren, Gunilla Kreiss</i></p> <p>5704 ON THE SIMULATION OF PHASE TRANSITION FLOWS USING THE NAVIER-STOKES KORTEWEG EQUATIONS ON UNSTRUCTURED GRIDS <i>Luis Ramirez, Xesús Nogueira, Takfarinas Ait-Ali, Sofiane Khelladi, Pablo Ouro, Ignasi Colominas</i></p>	<p>Artemis</p> <p>Wednesday, June 8 17:15-19:15</p> <p>MS 405: COMPUTATIONAL MODELING OF MULTIPHASE FLOWS: ADVANCED METHODS, INTERFACE PHENOMENA AND ENVIRONMENTAL APPLICATIONS</p> <p><i>MS Organizers:</i> Adeline Montlaur, Santiago Arias Calderón, Martin Kronbichler <i>Chair:</i> Martin Kronbichler</p> <p>12203 A 3D CFD NUMERICAL STUDY OF THE BUBBLE GENERATION PROCESS INTO A BUBBLE T-JUNCTION GENERATOR AND ITS COMPARISON WITH EXPERIMENTAL DATA: PART I <i>Santiago Arias, Adeline Montlaur</i></p> <p>5966 A 3D CFD NUMERICAL STUDY OF THE BUBBLE GENERATION PROCESS INTO A BUBBLE T-JUNCTION GENERATOR AND ITS COMPARISON WITH EXPERIMENTAL DATA: PART II <i>Santiago Arias Calderón, Adeline Montlaur</i></p> <p>7296 ACCURATE MODELING OF MOVING CONTACT LINE IN TWO-PHASE IMMISCIBLE FLOWS <i>Hanna Holmgren, Gunilla Kreiss</i></p> <p>5704 ON THE SIMULATION OF PHASE TRANSITION FLOWS USING THE NAVIER-STOKES KORTEWEG EQUATIONS ON UNSTRUCTURED GRIDS <i>Luis Ramirez, Xesús Nogueira, Takfarinas Ait-Ali, Sofiane Khelladi, Pablo Ouro, Ignasi Colominas</i></p>
<p>Wednesday, June 8 17:15-19:15</p> <p>MS 801 - 5: MULTISCALE COMPUTATIONAL HOMOGENIZATION FOR BRIDGING SCALES IN THE MECHANICS AND PHYSICS OF COMPLEX MATERIALS</p> <p><i>MS Organizers:</i> Julien Yvonnet, Kenjiro Terada, Peter Wriggers, Marc Geers <i>Chair:</i> Felix Fritzen</p> <p>11479 A HOMOGENIZATION TECHNIQUE FOR ELASTO-PLASTIC COMPOSITES <i>Federica Covezzi, Stefano de Miranda, Sonia Marfia, Elio Sacco</i></p> <p>5465 A SEMI-IMPLICIT MICROPLAR DISCRETE-TO-CONTINUUM METHOD FOR GRANULAR MATERIALS <i>Kun Wang, WaiChing Sun</i></p> <p>7726 MODELING OF LOW-ALLOYED TRIP-STEELS BASED ON DIRECT MICRO-MACRO SIMULATIONS <i>Stefan Prüger, Ashutosh Gandhi, Daniel Balzani</i></p> <p>8632 DISCRETE AND CONTINUUM MODELING OF THE EFFECTIVE PERMEABILITY OF MICROCRACKED MATERIALS <i>Jithender J. Timothy, Dirk Leonhart, Günther Meschke</i></p>	<p>Apollo East</p> <p>Wednesday, June 8 17:15-19:15</p> <p>MS 801 - 5: MULTISCALE COMPUTATIONAL HOMOGENIZATION FOR BRIDGING SCALES IN THE MECHANICS AND PHYSICS OF COMPLEX MATERIALS</p> <p><i>MS Organizers:</i> Julien Yvonnet, Kenjiro Terada, Peter Wriggers, Marc Geers <i>Chair:</i> Felix Fritzen</p> <p>11479 A HOMOGENIZATION TECHNIQUE FOR ELASTO-PLASTIC COMPOSITES <i>Federica Covezzi, Stefano de Miranda, Sonia Marfia, Elio Sacco</i></p> <p>5465 A SEMI-IMPLICIT MICROPLAR DISCRETE-TO-CONTINUUM METHOD FOR GRANULAR MATERIALS <i>Kun Wang, WaiChing Sun</i></p> <p>7726 MODELING OF LOW-ALLOYED TRIP-STEELS BASED ON DIRECT MICRO-MACRO SIMULATIONS <i>Stefan Prüger, Ashutosh Gandhi, Daniel Balzani</i></p> <p>8632 DISCRETE AND CONTINUUM MODELING OF THE EFFECTIVE PERMEABILITY OF MICROCRACKED MATERIALS <i>Jithender J. Timothy, Dirk Leonhart, Günther Meschke</i></p>

DAY 3 – WEDNESDAY, JUNE 8

<p>Wednesday, June 8 17:15-19:15</p> <p>CS 450 - 2: NUMERICAL METHODS AND CONVERGENCE ACCELERATION IN CFD</p> <p><i>Chair:</i> Jonathan Bull</p> <p>5822 A DIRECT SOLVER FOR THE ADVECTION-DIFFUSION EQUATION USING GREEN'S FUNCTIONS AND LOW-RANK APPROXIMATION <i>Jonathan Bull, Stefan Engblom, Sverker Holmgren</i></p> <p>5839 AN IMPROVED DISCRETIZATION METHOD FOR BOUNDED CONVECTIVE SCHEMES ON UNSTRUCTURED CO-LOCATED GRIDS <i>Vlado Przulj</i></p> <p>11423 COMPARISON OF DIFFERENT SPATIAL/ANGULAR AGGLOMERATION MULTIGRID SCHEMES FOR RADIATIVE HEAT TRANSFER COMPUTATIONS <i>Georgios Lygidakis, Ioannis Nikолос</i></p> <p>11677 SOLVING THE STEADY RANS EQUATIONS BY SELECTIVE FREQUENCY DAMPING: APPLICATION TO THE TURBULENT FLOW AROUND AN AIRFOIL AT STALL <i>François Richez, Olivier Marquet</i></p> <p>6066 A LOW-MACH, LOW-REYNOLDS PRECONDITIONING SCHEME WITH PARTICULAR ATTENTION TO VISCOUS TIME-STEPPING <i>Jens Fiedler, Graham Ashcroft</i></p>	<p>Apollo West</p>	<p>Wednesday, June 8 17:15-19:15</p> <p>MS 406: ADVANCES IN COMPUTATIONAL METHODS FOR GAS-LIQUID TWO-PHASE FLOW</p> <p><i>MS Organizers:</i> Byeong Rog Shin, Takeo Kajishima</p> <p><i>Chair:</i> Bernard Geurts</p> <p>11055 SECTIONAL EULERIAN MODELING OF AEROSOL DRIFT, DIFFUSION AND DEPOSITION <i>Edo Frederix, Arkadiusz Kuczaj, Markus Nordlund, Bernard Geurts</i></p> <p>8964 AN EMBEDDED-BOUNDARY FINITE-VOLUME METHOD FOR EULER FLOW WITH OCEAN APPLICATIONS <i>Curtis Lee, Hans Johansen, John Dolbow, Dan Graves, Dharshi Devendran</i></p> <p>10716 A METHOD OF CHAINED ANALYTICAL WAVE STRUCTURES FOR LARGE SCALE STRATIFIED TWO-PHASE PIPE FLOWS <i>Andreas Holm Akselsen</i></p> <p>10733 ENHANCEMENT OF EULERIAN-LAGRANGIAN MODEL FOR INVESTIGATION OF INTERACTION PRIMARY JET AND WATER MICROJETS IN A WIDE RANGE OF MACH NUMBERS <i>Matvei Kravoshin, Mikhail Kalugin, Sergei Strijhak</i></p> <p>6903 COUPLING OF FLUID STRUCTURE INTRACTION SOLVER WITH A VOF METHOD FOR MULTIPHASE STRUCTURE INTERACTION <i>Daniele Cerroni, Roberto Da Via', Sandro Manservisi, Filippo Menghini</i></p> <p>4409 FREE-SURFACE FLOW SIMULATION OF UNLIKE-DOUBLET IMPINGING JET ATOMIZATION <i>Junya Kouwa, Shinsuke Matsuno, Chihiro Inoue, Takehiro Himeno, Toshinori Watanabe</i></p>	<p>Room 2</p>
<p>Wednesday, June 8 17:15-19:15</p> <p>MS 1002: EVOLUTIONARY ALGORITHMS AND METAHEURISTICS IN CIVIL ENGINEERING AND CONSTRUCTION MANAGEMENT</p> <p><i>MS Organizers:</i> Jorge Magalhaes-Mendes, David Greiner</p> <p><i>Chair:</i> Jorge Magalhaes-Mendes, David Greiner</p> <p>4677 MULTIOBJECTIVE OPTIMIZATION USING GENETIC ALGORITHMS IN TIME-COST CONSTRUCTION PROJECT SCHEDULING PROBLEM <i>Jorge Magalhães-Mendes</i></p> <p>6785 NASH EVOLUTIONARY ALGORITHMS: TESTING PROBLEM SIZE IN RECONSTRUCTION PROBLEMS IN FRAME STRUCTURES <i>David Greiner, Jacques Periaux, Jose M. Emperador, Blas Galvan, Gabriel Winter</i></p> <p>6638 APPLICATION OF GENETIC ALGORITHMS TO STRUTTED SHEET PILE WALL DESIGN OPTIMIZATION <i>Mohamed Eid, Remon Isaac</i></p> <p>8233 OPTIMUM SEISMIC DESIGN OF REINFORCED CONCRETE FRAMES ACCORDING TO EC8 AND MC2010 WITH GENETIC ALGORITHMS <i>Panagiotis Mergos</i></p> <p>10285 CALIBRATION OF THE NUMERICAL MODEL OF A STAND IN DRAGÃO STADIUM BASED ON GENETIC ALGORITHMS <i>Jorge Leite, Diogo Ribeiro, Hugo Marques, Rui Calçada</i></p>	<p>Room 1</p>	<p>Wednesday, June 8 17:15-19:15</p> <p>MS 1006: PARAMETER IDENTIFICATION IN SOLID MECHANICS</p> <p><i>MS Organizers:</i> A. Gil Andrade-Campos, Marco Rossi, Sandrine Thuillier, Franck Toussaint, Marta C. Oliveira</p> <p><i>Chair:</i> A. Gil Andrade-Campos</p> <p>9504 ON THE DESIGN OF MECHANICAL TESTS FOR PARAMETER IDENTIFICATION OF ELASTO-PLASTIC CONSTITUTIVE MODELS <i>Nelson Souto, António Andrade-Campos, Sandrine Thuillier</i></p> <p>10447 USING BAYESIAN INFERENCE TO RECOVER THE MATERIAL PARAMETERS OF A HETEROGENEOUS HYPERELASTIC BODY <i>Jack S. Hale, Patrick E. Farrell, Stéphane P. A. Bordas</i></p> <p>6015 AN INVERSE PROBLEM STRATEGY BASED ON FORWARD MODEL EVALUATIONS: GRADIENT-BASED OPTIMIZATION WITHOUT ADJOINT SOLVES <i>Miguel Aguiló</i></p> <p>6942 STOCHASTIC MATERIAL CALIBRATION OF CERAMIC MATERIALS ON A SMALL SCALE – A COMPARISON BETWEEN DIFFERENT APPROACHES <i>Vladimir Buljak, Shwetank Pandey, Igor Balac</i></p> <p>9463 IDENTIFICATION OF MATERIAL PARAMETERS USING INDENTATION TEST AND MANIFOLD LEARNING APPROACH <i>Liang Meng, Piotr Breitkopf, Balaji Raghavanand, Gérard Mauvoisin, Olivier Bartier, Xavier Hernot</i></p>	<p>Room 3</p>

DAY 3 – WEDNESDAY, JUNE 8

<p>4685 IDENTIFICATION OF THE MECHANICAL PROPERTIES OF COMPOSITE MATERIALS REINFORCED WITH FLAX-FIBRES DURING IMPACT TESTING WITH FINITE ELEMENT MODEL UPDATING AND IMAGE ANALYSIS <i>Amélie Cuynet, Franck Toussaint, Emile Roux, Daniel Scida, Rezak Ayad</i></p> <p>9066 COHESIVE ZONE MODEL IDENTIFICATION WITH DCB TEST PARAMETER ESTIMATION SENSITIVITY <i>Racine Ly, Julien Jumel, Martin Shanahan, Florian Lavelle</i></p>	<p>Wednesday, June 8 17:15-19:35</p> <p>CS 720 - 2: COMPUTATIONAL MATERIALS SCIENCE <i>Chair:</i> Evgeny Barkanov</p> <p>5953 NUMERICAL SIMULATION OF ADVANCED PULTRUSION PROCESSES WITH MICROWAVE HEATING <i>Evgeny Barkanov, Pavel Akishin, Rudolf Emmerich, Matthias Graf</i></p> <p>10182 EFFICIENT NUMERICAL SIMULATION OF INDUSTRIAL SHEET METAL BENDING PROCESSES <i>Christian Zehetner, Paula Reimer, Franz Hammelmüller, Hans Irschik, Wolfgang Kunze</i></p> <p>9099 CRYSTAL VISCOPLASTICITY AND PLASTIC ANISOTROPY OF ALRICH TIAL SX AT 1050°C <i>Helal Chowdhury, Konstantin Naumenko, Holm Altenbach, Manja Krüger</i></p> <p>10782 A NOVEL TOOL FOR CONVERTING THE VOXEL REPRESENTATION OF MICROSTRUCTURES TO SMOOTH TETRAHEDRAL MESHES <i>Carl Sandström</i></p> <p>11094 A PARTICLE-BASED MODEL TO INVESTIGATE THE MECHANICS OF SOFT FIBRE NETWORK <i>Md Shakhawath Hossain, Per Bergström, Tetsu Uesaka</i></p> <p>10183 NUMERICAL MODELLING AND SIMULATION OF SHEET METAL CUTTING PROCESSES <i>Paula Reimer, Christian Zehetner, Franz Hammelmüller, Wolfgang Kunze</i></p> <p>4708 THE INFLUENCE OF THERMAL BARRIERS IN ANISOTROPIC MEDIA APPLIED TO PCB USING MEC <i>N.C. Anunciação Jr, T.S.L. Oliveira, C.T.M Anflor</i></p>
<p>Wednesday, June 8 17:15-19:15</p> <p>MS 408 - 2: MANIPULATION AND CONTROL OF TURBULENT FLOW <i>MS Organizers:</i> Markus Rütten, Christina Voß <i>Chair:</i> Markus Rütten, Christina Voß</p> <p>6549 MANIPULATION AND CONTROL OF TURBULENT FLOW <i>Christina Voß, Markus Rütten</i></p> <p>7060 A FRAMEWORK FOR SIMULTANEOUS OPTIMIZATION OF CHAOTIC AND TURBULENT FLOWS <i>Stefanie Günther, Nicolas Gauger, Qiqi Wang</i></p> <p>4628 MODELING OF EXCITATION OF CONTROLLING DISTURBANCES IN SWEEP WING BOUNDARY LAYER BY MEANS OF PLASMA ACTUATORS <i>Sergey Chernyshev, Andrey Kiselev, Aleksandr Kuryachii</i></p> <p>10690 NUMERICAL SIMULATION OF INTERACTION PROCESS BETWEEN DIELECTRIC BARRIER DISCHARGE AND DUCT FLOW <i>Pavel Semenev, Dmitriy Pudovikov, Pavel Toktaliev</i></p> <p>10988 IMPLEMENTATION OF POD AND DMD METHODS IN APACHE SPARK FRAMEWORK FOR SIMULATION OF UNSTEADY TURBULENT FLOW IN THE MODEL COMBUSTOR <i>Mikhail Kalugin, Sergei Strijhak</i></p> <p>7306 DOLPHIN-INSPIRED DRAG REDUCTION FOR SHIPS <i>Lars-Uwe Schrader, Jochen Marzi, Amir Banari, Christian F. Janßen, Thomas Rung</i></p>	<p>Wednesday, June 8 17:15-19:15</p> <p>MS 1201 - 2: COMPUTATIONAL STRUCTURAL DYNAMICS <i>MS Organizers:</i> Evangelos J. Sapountzakis, Andreas E. Kampitsis <i>Chair:</i> Evangelos J. Sapountzakis</p> <p>6772 DYNAMIC RESPONSE OF REAL OFFSHORE WIND TURBINES ON MONOPILES IN STRATIFIED SEABED <i>Guillermo M. Álamo, Juan J. Aznárez, Luis A. Padrón, Alejandro E. Martínez-Castro, Rafael Gallego, Orlando Maeso</i></p> <p>9090 NONLINEAR DYNAMICS OF A TIME DELAYED COUPLING DUFFING OSCILLATORS <i>Andrzej Weremczuk, Rafał Rusinek, Jerzy Warminski</i></p> <p>9910 INVARIANCE OF EIGENFREQUENCIES AND EIGENMODES UNDER GEOMETRIC TRANSFORMATION IN ELONGATED ELASTIC STRUCTURES <i>Maryam Morvaridi, Michele Brun</i></p> <p>10008 AN EFFICIENT MODELING TECHNIQUE FOR DYNAMIC ANALYSIS OF BOX GIRDER BRIDGE SUPERSTRUCTURES BASED ON A RIGOROUS CROSS-SECTIONAL ANALYSIS <i>Kiana Kashefi, Abdul Hamid Sheikh</i></p> <p>9209 NUMERICAL ROUTINE FOR DYNAMIC ANALYSIS OF TRANSMISSION LINES GUYED TOWERS SUBMITTED TO BROKEN CABLE <i>Thiago Brazeiro Carlos, João Kaminski Jr.</i></p> <p>7734 STRUCTURED SPATIAL DISCRETIZATION OF DYNAMICAL SYSTEMS <i>Marko Jokic, Andrej Jokic, Bruno Dogancic</i></p>
<p>Wednesday, June 8 17:15-19:15</p> <p>CS 410 - 6: COMPUTATIONAL FLUID MECHANICS <i>Chair:</i> Julien Bruchon</p> <p>5971 A NEW VARIATIONAL FORMULATION OF THE TRIPLE JUNCTION EQUILIBRIUM <i>Julien Bruchon, Nicolas Moulin, Yujie Liu</i></p> <p>11856 EXTENSION OF IMMersed BOUNDARY METHODS TO STRETCHED RECTILINEAR GRIDS. <i>Joris Picot, Stéphane Glockner, Thomas Milcent, Delphine Lacanette</i></p> <p>7539 A KRYLOV-BASED EXPONENTIAL TIME INTEGRATOR OF THE INCOMPRESSIBLE NAVIER-STOKES EQUATION <i>Gijs Kooij, Mike Botchev, Bernard Geurts</i></p> <p>8780 IMMersed BOUNDARY METHODS FOR COMPRESSIBLE LAMINAR FLOWS <i>Rakesh Ramakrishnan, Anant Girdhar, Santanu Ghosh</i></p>	<p>Wednesday, June 8 17:15-19:15</p> <p>Room 5</p> <p>MS 1201 - 2: COMPUTATIONAL STRUCTURAL DYNAMICS <i>MS Organizers:</i> Evangelos J. Sapountzakis, Andreas E. Kampitsis <i>Chair:</i> Evangelos J. Sapountzakis</p> <p>6772 DYNAMIC RESPONSE OF REAL OFFSHORE WIND TURBINES ON MONOPILES IN STRATIFIED SEABED <i>Guillermo M. Álamo, Juan J. Aznárez, Luis A. Padrón, Alejandro E. Martínez-Castro, Rafael Gallego, Orlando Maeso</i></p> <p>9090 NONLINEAR DYNAMICS OF A TIME DELAYED COUPLING DUFFING OSCILLATORS <i>Andrzej Weremczuk, Rafał Rusinek, Jerzy Warminski</i></p> <p>9910 INVARIANCE OF EIGENFREQUENCIES AND EIGENMODES UNDER GEOMETRIC TRANSFORMATION IN ELONGATED ELASTIC STRUCTURES <i>Maryam Morvaridi, Michele Brun</i></p> <p>10008 AN EFFICIENT MODELING TECHNIQUE FOR DYNAMIC ANALYSIS OF BOX GIRDER BRIDGE SUPERSTRUCTURES BASED ON A RIGOROUS CROSS-SECTIONAL ANALYSIS <i>Kiana Kashefi, Abdul Hamid Sheikh</i></p> <p>9209 NUMERICAL ROUTINE FOR DYNAMIC ANALYSIS OF TRANSMISSION LINES GUYED TOWERS SUBMITTED TO BROKEN CABLE <i>Thiago Brazeiro Carlos, João Kaminski Jr.</i></p> <p>7734 STRUCTURED SPATIAL DISCRETIZATION OF DYNAMICAL SYSTEMS <i>Marko Jokic, Andrej Jokic, Bruno Dogancic</i></p>

DAY 3 – WEDNESDAY, JUNE 8

<p>Wednesday, June 8 17:15-19:15</p> <p>MS 203: COMPUTATIONAL METHODS FOR MODELLING INSTABILITIES IN SOLIDS & STRUCTURES <i>MS Organizers:</i> Spyros A. Karamanos <i>Chair:</i> Spyros A. Karamanos</p> <p>12018 KEYNOTE: EFFICIENCY OF DAMAGE-PLASTICITY MODELS IN CAPTURING COMPACTION-EXPANSION TRANSITION OF CONCRETE UNDER DIFFERENT COMPRESSION LOADING CONDITIONS <i>Reza Mousavi, Masoud D. Champiri, Kaspar J Willam</i></p> <p>11295 KEYNOTE: NON-ASSOCIATIVE J2 PLASTICITY MODEL FOR FINITE ELEMENT BUCKLING ANALYSIS OF THICK-WALLED METAL SHELLS <i>Spyros A. Karamanos, Patricia Pappa</i></p> <p>10362 ON STABILITY LOSS OF A THIN-WALLED SPHERICAL SHELL SUBJECTED TO EXTERNAL PRESSURE AND INTERNAL HOMOGENEOUS CORROSION <i>Emmanuel Gutman, Rudolf Bergman, Semyon Levitski</i></p> <p>7803 APPLICATION OF THICK LEVEL-SET METHOD TO DYNAMIC FRAGMENTATION OF BRITTLE MEDIA <i>Andrew Stershic, John Dolbow, Nicolas Moës</i></p>	<p>Room 9</p>	<p>Wednesday, June 8 17:15-19:35</p> <p>MS 410 - 3: COMPLEX FLUID FLOWS IN ENGINEERING: MODELLING, SIMULATION AND OPTIMIZATION <i>MS Organizers:</i> Stefanie Elgeti, Philipp Knechtges <i>Chair:</i> Philipp Knechtges</p> <p>4504 TALKING DROPS: OSCILLATING MARANGONI CONVECTION ENABLES INFORMATION PROPAGATION BETWEEN NANODROPS <i>Sebastian Aland</i></p> <p>5044 NUMERICAL ANALYSIS OF RAREFIED GAS FLOWS USING THE ACADEMIC CFD CODE GALATEA <i>Angelos Klothakis, Georgios Lygidakis, Ioannis Nikолос</i></p> <p>6582 NUMERICAL SIMULATION OF THE CONJUGATE HEAT TRANSFER IN THE COOLING SYSTEM OF THE COMBUSTION CHAMBERS OF THE AVIATION RAMJET ON THE ENDOOTHERMIC FUELS <i>Vadim Volokhov, Sergei Martynenko, Pavel Toktaliev</i></p> <p>6620 COMBINING COMPUTATIONAL FLUID DYNAMICS AND DIMENSIONAL ANALYSIS IN THE DESIGN OF OIL SKIMMER TANKS <i>Axel Larreteguy, Francisco Barceló, Pablo Caron</i></p> <p>8700 NEAR WALL BEHAVIOR OF IMPLICIT LARGE EDDY SIMULATIONS <i>Ioannis Kokkinakis, Dimitris Drikakis</i></p> <p>9282 MOLD FILLING SIMULATIONS HELP IMPROVE THE MANUFACTURING PROCESS FOR CFRP COMPONENTS <i>Dino Magagnato</i></p> <p>8961 A PARALLEL MULTIGRID SOLVER FOR TIME PERIODIC INCOMPRESSIBLE NAVIER-STOKES EQUATIONS <i>Pietro Benedusi, Rolf Krause, Peter Arbenz, Daniel Hupp</i></p>	<p>Room 11</p>
<p>Wednesday, June 8 17:15-19:15</p> <p>MS 414 - 2: NEW TRENDS IN NUMERICAL METHODS FOR MULTI-MATERIAL COMPRESSIBLE FLUID FLOWS <i>MS Organizers:</i> Andy Barlow, Michael Dumbser, Raphaël Loubère, Pierre-Henri Maire, Rob Rieben, Mikhail Shashkov, François Vilar <i>Chair:</i> Pierre-Henri Maire</p> <p>6435 POROElasticity: FLEXIBLE HIGH-ORDER VARIATIONAL SPACE-TIME DISCRETISATIONS <i>Uwe Köcher, Markus Bause</i></p> <p>10639 ISOTROPY-PRESERVING SLOPE LIMITERS FOR FINITE VOLUME METHODS ON SQUARE MESHES <i>Jan Velechovsky, Marianne Francois</i></p> <p>6287 EULERIAN CALCULATIONS OF MULTIMATERIAL FLOWS WITH SUB-CELL RECONSTRUCTION OF INTERFACES. <i>Igor Menshov, Pavel Zakharov</i></p> <p>7567 A CONSERVATIVE SLIDE LINE METHOD FOR CELL-CENTERED SEMI-LAGRANGIAN AND ALE SCHEMES IN 2D <i>Silvia Bertoluzza, Stéphane Del Pino, Emmanuel Labourasse</i></p> <p>8851 LAGRANGE-FLUX EULERIAN SCHEMES FOR COMPRESSIBLE MULTIMATERIAL FLOWS <i>Florian De Vuyst, Thibault Gasc, Renaud Motte, Mathieu Peybernes, Raphael Poncet</i></p> <p>9959 A CARTESIAN SCHEME FOR COMPRESSIBLE MULTIMATERIAL MODELS WITH PLASTICITY <i>Thomas Milcent, Angelo Iollo, Alexia de Brauer</i></p>	<p>Room 10</p>	<p>Wednesday, June 8 17:15-19:15</p> <p>MS 1003 - 2: ADVANCES IN DESIGN OPTIMIZATION OF STRUCTURES AND MATERIALS <i>MS Organizers:</i> Zhen Luo, Zhan Kang <i>Chair:</i> Qi Xia, Xiaopeng Zhang</p> <p>9472 ECOCEMENT: A NOVEL COMPOSITE MATERIAL FOR THE CONSTRUCTION INDUSTRY. IDENTIFICATION OF AN OPTIMAL RECIPE USING NEURAL NETWORKS <i>Natia Anastasi, Nikolaos Bakas, Piero Tiano, Jay Stuart, Linda Wittig, Javier Royo, Laura Sanchez, Oana Cuzman, Katharina Richter</i></p> <p>8087 TOPOLOGY OPTIMIZATION OF PERIODIC STRUCTURES FOR COUPLED ACOUSTIC-STRUCTURE SYSTEMS <i>William Vicente, Renato Picelli, Renato Pavanello, Mike Xie</i></p> <p>7294 APPROXIMATION OF GRADIENTS IN TOPOLOGY OPTIMIZATION OF FLEXIBLE MULTIBODY SYSTEMS <i>Ali Moghadasi, Alexander Held, Robert Seifried</i></p> <p>5372 ROBUST STRUCTURAL DESIGN FOR UNKNOWN LOADINGS WITH FREE-FORM OPTIMIZATION METHOD <i>Masatoshi Shimoda, Tomohiro Ngano</i></p> <p>8831 BESO APPROACH TO TOPOLOGY OPTIMIZATION OF GAN PHONONIC CRYSTALS <i>Luca D'Alessandro, Bichoy Bahr, Luca Daniel, Dana Weinstein, Raffaele Ardito</i></p>	<p>Room 12</p>

DAY 3 – WEDNESDAY, JUNE 8

<p>Wednesday, June 8</p> <p>17:15-19:15</p>	<p>Room 15</p>	
<p>MS 804 - 1: MULTISCALE AND COMPUTATIONAL APPROACHES TO FRACTURE AND FAILURE</p> <p><i>MS Organizers:</i> Haim Waisman, Caglar Oskay <i>Chair:</i> Caglar Oskay</p>		<p>10521 EFFECTIVE 3D REGULARIZED XFEM FOR PULL-OUT OF STEEL BARS IN CONCRETE, BENDING AND SHEAR TESTS ON FRP-REINFORCED CONCRETE BEAMS <i>Elena Benvenuti, Nicola Orlando</i></p>
<p>7732 KEYNOTE: INTERACTIONS OF DAMAGE MECHANISMS IN COMPOSITES SUBJECTED TO FATIGUE – LESSONS LEARNED FROM A BLIND PREDICTION STUDY <i>Michael Bogdanor, Caglar Oskay, Stephen Clay</i></p>		<p>8342 NUMERICAL ISSUES OF ENRICHED FEM WITH QUADRATIC ELEMENTS <i>Marcel Ndeffo, Patrick Massin</i></p>
<p>4676 KEYNOTE: PHASE FIELD MODELING OF COMPLEX MATRIX/INTERFACIAL CRACK PROPAGATION IN COMPLEX MICROSTRUCTURES OBTAINED FROM MICROTOMOGRAPHY IMAGES <i>Julien Yvonnet, Thanh Tung Nguyen, Michel Bornert, Camille Chateau, Qizhi Zhu</i></p>		<p>4909 A NONCONFORMING HIGH-ORDER METHOD ON POLYTOPAL MESHES FOR THE BIOT PROBLEM <i>Daniele Boffi, Michele Botti, Daniele Antonio Di Pietro</i></p>
<p>Wednesday, June 8</p> <p>17:15-19:15</p>	<p>Room 21</p>	
<p>MS 110: COMPUTATIONAL BONE MECHANICS</p> <p><i>MS Organizers:</i> Bernd Markert, Udo Nackenhorst, Martin Ruess <i>Chair:</i> Martin Ruess</p>		<p>6479 TOWARDS AN INTEGRATED COMPUTATIONAL FRAMEWORK ON BONE IMPLANT SURGERY <i>Udo Nackenhorst, Gabriela von Lewinski</i></p>
<p>10119 A SIMPLE LINEAR TETRAHEDRAL FINITE ELEMENT FOR INCOMPRESSIBLE SOLID DYNAMICS: THE ALGORITHM AND ITS BENEFITS IN FAILURE MECHANICS <i>Guglielmo Scovazzi, Xianyi Zeng, Simone Rossi, Brian Carnes</i></p>		<p>8215 MICROMECHANICAL STIFFNESS ESTIMATION OF TISSUE ENGINEERING SCAFFOLDS COMPOSED OF HYDROXYAPATITE GRANULES, CONSIDERING BONE REGENERATION <i>Stefan Scheiner, Vladimir Komlev, Alexey Gurin, Christian Hellmich</i></p>
<p>8473 DESIGNING MANUFACTURABLE VISCOELASTIC DEVICES USING A TOPOLOGY OPTIMIZATION APPROACH WITHIN A TRULY-MIEX FEM FRAMEWORK <i>Paolo Venini, Marco Pingaro, Carlo Cinquini</i></p>		<p>11304 COUPLING THE FINITE CELL METHOD WITH FEATURE EXTRACTION AND DIFFUSE INTERFACES FOR FULLY AUTOMATED STRESS ANALYSIS OF CT BASED BONE STRUCTURES <i>Stein Stoter, Lam H. Nguyen, Martin Ruess, Dominik Schillinger</i></p>
<p>8257 ON A MULTI-MATERIAL OPTIMIZATION METHOD WITH DIRECT GRAYNESS AND LENGTH-SCALE CONTROL <i>Michael Stingl</i></p>		<p>8814 COMPUTATIONAL MODELING OF A PROXIMAL FEMUR: A BENCHMARK TEST BETWEEN FINITE-ELEMENT ANALYSIS AND FLEXIBLE MULTIBODY SIMULATION <i>Andreas Geier, Märwan Kebabach, Ehsan Soodmand, Daniel Klüß, Evelyn Winter, Anne-Marie Neumann, Andreas Wree, Christoph Woernle, Rainer Bader</i></p>
<p>8614 ISO-XFEM FOR TOPOLOGY OPTIMIZATION OF STRUCTURES UNDER MULTIPLE LOAD CASES AND ACCELERATION LOADING <i>Meisam Abdi, Ian Ashcroft, Ricky Wildman</i></p>		<p>9870 BIOMECHANICAL SUBJECT-SPECIFIC SIMULATIONS OF A FRACTURED TIBIA TREATED WITH AN INTRAMEDULLARY NAIL <i>Michael Roland, Thorsten Tjardes, Bertil Bouillon, Stefan Diebel</i></p>
<p>6338 ANISOTROPIC MATERIAL ORIENTATION OPTIMIZATION METHOD IN COMPOSITE LAMINATES <i>Mario Petrovic, Tsuyoshi Nomura, Takayuki Yamada, Kazuhiro Izui, Shinji Nishiwaki</i></p>		<p>16485 MODELING MECHANICAL BEHAVIOR OF TRABECULAR BONE <i>S. Burhanettin Altan, Aysegül Tepe</i></p>
<p>Wednesday, June 8</p> <p>17:15-19:15</p>	<p>Room 23</p>	
<p>MS 907 - 3: REGULARIZED ENRICHED APPROXIMATIONS AND QUADRATURE FOR DISCONTINUITIES, SINGULARITIES AND CONTINUOUS-DISCONTINUOUS TRANSITION</p> <p><i>MS Organizers:</i> Elena Benvenuti, Giulio Ventura, José M.A. César de Sá <i>Chair:</i> José M.A. César de Sá</p>		<p>MS 1009 - 4: ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION</p> <p><i>MS Organizers:</i> Kyriakos C. Giannakoglou, Jens Dominik Mueller <i>Chair:</i> Thomas Rung</p>
<p>6486 KEYNOTE: THE EFFECT OF QUADRATURE ON HIGH ORDER FICTITIOUS DOMAIN METHODS <i>Silvia Bertoluzza, Vincent Chabannes, Mourad Ismail, Christophe Prud'homme</i></p>		<p>10628 SHAPE OPTIMIZATION FOR THE REDUCTION OF FLOW-INDUCED NOISE <i>Nikolaos Magoulas, Michael Hartmann</i></p>
		<p>10909 DISCRETE ADJOINT OPENFOAM BASED SENSITIVITY ANALYSIS FOR AERODYNAMIC OPTIMIZATION <i>Arindam Sen, Markus Towara, Uwe Naumann</i></p>
		<p>10976 DEVELOPMENT OF A DISCRETE ADJOINT CFD CODE USING ALGORITHMIC DIFFERENTIATION <i>Sheikh Razibul Islam, Johannes Lotz, Jacek Szumbarski</i></p>

DAY 3 – WEDNESDAY, JUNE 8

11245 ON THE DIFFERENTIATION OF SIMPLE ALGORITHM IN ONE-

SHOT METHODS FOR OPTIMAL DESIGN

Siamak Akbarzadeh, Jens Dominik Müller

11355 REDUCING THE MEMORY FOOTPRINT OF UNSTEADY ADJOINT

CFD THROUGH CHECKPOINTING WITH TEMPORAL AND SPATIAL

COARSENING

Jan Hueckelheim, Jens-Dominik Mueller

11651 CAD-FREE VS CAD-BASED PARAMETRISATION METHOD IN

ADJOINT BASED AERODYNAMIC SHAPE OPTIMIZATION

Rejish Jesudasan, Xingchen Zhang, Mateusz Gugala, Jens-

Dominik Mueller

TECHNICAL SESSIONS

Thursday, June 9 8:30-10:30	Zeus East	Thursday, June 9 8:30-10:30	Zeus North
MS 403 - 2: PARTICLE-BASED METHODS IN FLUID MECHANICS <i>MS Organizers:</i> Sergio Idelsohn, Eugenio Oñate <i>Chair:</i> Eugenio Oñate, Sergio Idelsohn		MS 901 - 6: ISOGEOOMETRIC METHODS <i>MS Organizers:</i> Yuri Bazilevs, David J. Benson, Rene De Borst, Thomas J.R. Hughes, Trond Kvamsdal, Alessandro Reali, Giancarlo Sangalli, Clemens V. Verhoosel <i>Chair:</i> Thomas Elguedj	
7927 KEYNOTE: A LAGRANGIAN PFEM APPROACH TO THE NUMERICAL SIMULATION OF 3D LARGE SCALE LANDSLIDES IMPINGING IN WATER RESERVOIRS <i>Massimiliano Cremonesi, Francesco Ferri, Umberto Perego</i>		7720 KEYNOTE: AN INTERFACE-BASED TESSELLATION PROCEDURE FOR THE NUMERICAL INTEGRATION OF TRIMMED ELEMENTS IN THE ISOGEOOMETRIC FINITE CELL METHOD <i>Clemens Verhoosel, Gertjan van Zwieten</i>	
7552 A LAGRANGIAN FINITE ELEMENT METHOD FOR THE SIMULATION OF 3D COMPRESSIBLE FLOWS <i>Massimiliano Cremonesi, Attilio Frangi</i>		7615 NURBS BASED GALERKIN APPROACH FOR THE ANALYSIS OF BOUNDARY REPRESENTED SOLIDS <i>Sven Klinkel, Lin Chen</i>	
9037 PFEM-2 : THE MOST EFFICIENT WAY TO SOLVE CONVECTION-DOMINATED PROBLEMS <i>Pablo Agustín Becker, Sergio R. Idelsohn, Eugenio Oñate</i>		7872 DIRECT INTERACTIVE VISUALIZATION OF LR- AND T-SPLINE VOLUMES FOR USE IN LARGE-SCALE SCIENTIFIC COMPUTING AND ISOGEOOMETRIC ANALYSIS <i>Franz Georg Fuchs, Jon Mikkelsen Hjelmervik</i>	
12896 SPH SIMULATION OF MULTIPHASE FLOW <i>Bo Ren, Chenzheng Li, Javier Bonet, Shimin Hu</i>		6946 OPTIMAL QUADRATURE RULES FOR EXACT INTEGRATION IN ISOGOMETRIC ANALYSIS <i>Kjetil Andre Johannessen</i>	
6223 TWO NOVEL WAYS TO IMPOSE FREE-SLIP BOUNDARY CONDITIONS IN FLUID-STRUCTURE INTERACTION PROBLEMS USING THE PARTICLE FINITE ELEMENT METHOD <i>Marco Lucio Cerquaglia, Geoffrey Deliége, Romain Boman, Jean-Philippe Ponthot</i>		9137 ISOGEOMETRIC MODELING OF RED BLOOD CELLS <i>Luca Dede', Andrea Bartezzaghi, Alfio Quarteroni</i>	

Thursday, June 9 8:30-10:30	Zeus West	Thursday, June 9 8:30-10:30	Minos East
MS 1007 - 5: ADDITIVE MANUFACTURING AND OPTIMIZATION <i>MS Organizers:</i> Ekkehard Ramm, Ole Sigmund, Pierre Duysinx, Wing Kam Liu <i>Chair:</i> Wing Kam Liu, Paolo Venini		MS 602 - 2: INNOVATIVE METHODS FOR FLUID-STRUCTURE-INTERACTION <i>MS Organizers:</i> E. Harald van Brummelen, Roger Ohayon, Trond Kvamsdal <i>Chair:</i> E. Harald van Brummelen	
5118 SHAPE AND TOPOLOGY OPTIMIZATION ACCOUNTING FOR ADDITIVE MANUFACTURING CONSTRAINTS: INFLUENCE OF INDUCED ANISOTROPY <i>Alexis Faure, Charles Dapogny, Georgios Michailidis, Rafael Estevez, Guillaume Parry, Natasha Vermaak</i>		5325 INFLUENCE OF TURBULENCE MODELING APPROACHES IN THE CONTEXT OF FLUID-STRUCTURE INTERACTION PREDICTIONS <i>Michael Schäfer</i>	
15032 METHOD AND APPLICATION OF CONTINUUM TOPOLOGY OPTIMIZATION OF THERMO-ELASTIC STRUCTURES <i>Tong Gao, Lei Tang, Libin Qiu, Lu Zhou, Yingbin He, Weihong Zhang</i>		6595 UNIFIED FORMULATION FOR THERMO-COUPLED FSI PROBLEMS USING THE PFEM. APPLICATION TO PHASE CHANGE PROBLEMS <i>Eugenio Oñate, Alessandro Franci, Josep Maria Carbonell</i>	
7766 FINITE ELEMENT APPROXIMATION OF A TIME-DEPENDENT TOPOLOGY OPTIMIZATION PROBLEM <i>Matteo Bruggi, Nicola Parolini, Francesco Regazzoni, Marco Verani</i>		6597 ASSESSMENT OF THE FLUID-STRUCTURE INTERACTION CAPABILITIES FOR AERONAUTICAL APPLICATIONS OF THE OPEN-SOURCE SOLVER SU2. <i>Ruben Sanchez, Heather L. Kline, David Thomas, Anil Variyar, Marcello Righi, Thomas D. Economon, Juan J. Alonso, Rafael Palacios, Grigoris Dimitriadis, Vincent Terrapon</i>	
6484 TOPOLOGY OPTIMIZATION FOR ADDITIVE MANUFACTURING USING SELF-SUPPORTING RHOMBIC STRUCTURES <i>Jun Wu, Charlie C. L. Wang, Xiaoting Zhang, Rüdiger Westermann</i>		11836 A NEW FINITE-ELEMENT FRAMEWORK FOR FLUID-STRUCTURE-INTERACTIONS CONSIDERING FLEXIBLE MEMBRANES: THEORY AND APPLICATION <i>Tobias Luginsland, Roger A. Sauer</i>	
9130 SUPPORT STRUCTURE CONSTRAINED TOPOLOGY OPTIMIZATION FOR ADDITIVE MANUFACTURING <i>Amir M. Mirzendehdel, Krishnan Suresh</i>		7384 FLUID-STRUCTURE INTERACTION IN A CLUSTER OF CYLINDERS EXPOSED TO AXIAL FLOW: FROM LOW-ORDER MODELS TO FULLY COUPLED CFD-CSM METHODS <i>Jeroen De Ridder, Katrien Van Tichelen, Joris Degroote, Jan Vierendeels</i>	

DAY 4 – THURSDAY, JUNE 9

Thursday, June 9	Minos North
8:30-10:30	

STS 6: DRAG REDUCTION AND FLOW CONTROL TECHNOLOGIES

STS Organizers: Dietrich Knoerzer, Geza Schrauf
Chair: Dietrich Knoerzer

15088 THE NATURAL LAMINAR FLOW FLIGHT TEST OF THE BLADE PROJECT OF CLEANSKY

Paul Phillips

14381 STABILITY, TRANSITION AND CONTROL OF THREE-DIMENSIONAL BOUNDARY-LAYER FLOWS

Ardeshir Hanifi

14384 HYBRID LAMINAR FLOW CONTROL TEST CASES FOR TRANSITION AND DRAG PREDICTION

Geza Schrauf

14388 INTEGRATED DESIGN METHOD FOR AIRCRAFT WITH HYBRID LAMINAR FLOW CONTROL WINGS

Kristof Risse, Eike Stumpf

Thursday, June 9	Minos South
8:30-10:30	

MS 112 - 6: ANEURYSMS: SOLID MECHANICS, FLUID MECHANICS, AND MECHANOBILOGY

MS Organizers: Christian J. Cyron, Sven Hirsch, Philippe Bijlenga, Roland C. Aydin, Anne M. Robertson, Gerhard A. Holzapfel

Chair: Christian J. Cyron, Philippe Bijlenga

8063 KEYNOTE: ON-GOING RESEARCHES FOR NEW PERSONALIZED RISK OF RUPTURE FOR ASCENDING THORACIC ANEURYSMS

Olfa Trabelsi, Ambroise Duprey, Stéphane Avril

5944 IDENTIFICATION OF ANEURYSM PROGRESSION BASED ON SURFACE SIMILARITY

Michael Gee, Sebastian Kehl

9112 SHAPE-BASED MODELING OF ANEURYSMAL DISEASE STATUS

Norman Juchler, Sabine Schilling, Isabel Wanke, Daniel Rüfenacht, Philippe Bijlenga, Vartan Kurtcuoglu, Sven Hirsch

7807 BIFURCATION CONFIGURATION AS A CRITERION AFFECTING RISK OF ANEURYSM RUPTURE IN BASILAR ARTERY ANEURYSMS

Sherif Rashad, Shin-ichiro Sugiyama, Kuniyasu Niizuma, Kenichi Sato, Yasushi Matsumoto, Miki Fujimura, Teiji Tominaga

8274 CEREBRAL VESSELS AND ANEURYSMS: WHAT CAN WE LEARN FROM PATIENT-SPECIFIC WALL THICKNESS?

Samuel Voß, Philipp Berg, Sylvia Glaßer, Thomas Hoffmann, Simon Weigand, Gábor Janiga

Thursday, June 9	Europa
8:30-10:30	

CS 630 - 2: SIMULATION OF FLUID-STRUCTURE INTERACTION

Chair: Jan A. Kołodziej

9435 APPLICATION OF THE MFS AND THE SPTF FOR DETERMINATION OF SLIP CONSTANT IN THE BEAVERS-JOSEPH BOUNDARY CONDITION

Jan A. Kołodziej, Magdalena Mierzwiczak, Jakub K. Grabski

6656 COUPLED STOKES-DARCY FLOWS IN ORTHOTROPIC POROUS MEDIUM UNDERGOING FINITE STRAIN

Maxime Blais, Nicolas Moulin, Julien Bruchon, Sylvain Drapier

6844 A HYBRID FE PROCEDURE FOR SIMULATION OF COUPLED ELECTRICAL, THERMAL, AND MECHANICAL FIELDS IN ELECTRO-THERMALLY DRIVEN MICRO-ACTUATORS

Walerian Szyszkowski, Daryl Hill

11124 HOMOTOPY ANALYSIS METHOD FOR FLUID FLOW THROUGH FIBROUS POROUS MEDIA

Magdalena Mierzwiczak

Thursday, June 9

Leda

8:30-10:30

MS 904 - 1: ADVANCED MINIMIMAL RESIDUAL DISCRETIZATION

MS Organizers: Carsten Carstensen, Dietmar Gallistl

Chair: Carsten Carstensen

12123 ADAPTIVE ITERATIVE SOLVERS FOR THE DPG METHOD

Socratis Petrides, Leszek Demkowicz

12134 A DPG APPROACH TO THE NONLINEAR SCHRODINGER EQUATION

Sriram Nagaraj, Leszek Demkowicz

7003 DPG FOR TIME-HARMONIC MAXWELL EQUATIONS

Carsten Carstensen, Johannes Storn

8850 AN ADAPTIVE LEAST-SQUARES FEM FOR THE STOKES EQUATIONS WITH OPTIMAL CONVERGENCE RATES

Philipp Bringmann, Carsten Carstensen

Thursday, June 9

Athena

8:30-10:30

MS 1401 - 1: TOICA: THERMAL OVERALL INTEGRATED CONCEPT AIRCRAFT

MS Organizers: Pierre Arbez, Jean-Claude Dunyach

Chair: Jean-Claude Dunyach

9480 THERMAL OVERALL INTEGRATED CONCEPT AIRCRAFT – THE TOICA PROJECT

Pierre Arbez

16673 THE BEHAVIOURAL DIGITAL AIRCRAFT ENVIRONMENT

Sanjiv Sharma, Jean-Claude Dunyach

11179 SUPER INTEGRATION: SEEKING NOVEL VALUED SOLUTIONS

Sanjiv Sharma, Christoffer Levandowski, Arturo Molina-Cristobal, Timoleon Kipouros, Ola Isaksson, Trevor Robinson

9111 VISUAL ANALYTICS FOR EVALUATION OF VALUE IMPACT IN ENGINEERING DESIGN

Timoleon Kipouros, Ola Isaksson

Thursday, June 9

Artemis

8:30-10:30

MS 1210: ADVANCES IN MODELING AND ANALYSIS OF FGM STRUCTURES

MS Organizers: Justin Murin, Stephan Kugler, Mehdi Aminbaghai

Chair: Justin Murin

4649 ELASTOSTATIC AND MODAL AND BUCKLING ANALYSIS OF SPATIAL FGM BEAM STRUCTURES

Justin Murin, Mehdi Aminbaghai, Juraj Hrabovsky, Vladimir Kutis, Juraj Paulech, Stephan Kugler

DAY 4 – THURSDAY, JUNE 9

<p>7908 A HIGHER ORDER HYBRID FINITE ELEMENT FOR FGM BEAM STRUCTURES <i>Peter Fotiu, Stephan Kugler</i></p> <p>5592 THERMO-ELASTICITY IN SHELL STRUCTURES MADE OF FUNCTIONALLY GRADED MATERIALS <i>Stephan Kugler, Peter Fotiu, Justin Murin</i></p> <p>6577 NUMERICAL SOLUTION OF DIFFERENTIAL EQUATIONS WITH NON-CONSTANT COEFFICIENTS <i>Juraj Hrabovský, Justín Murín, Mehdi Aminbaghai, Vladimír Kutiš, Juraj Paulech</i></p> <p>6572 FINITE BEAM ELEMENT WITH PIEZOELECTRIC LAYERS AND FUNCTIONALLY GRADED MATERIAL OF CORE <i>Vladimír Kutiš, Justín Murín, Juraj Paulech, Juraj Hrabovský, Roman Gogola, Jakub Jakubec</i></p> <p>7175 TWO-WAY COUPLED ELECTRO-THERMAL ANALYSIS OF FGM SYSTEM CALCULATED BY THE NEW LINK FINITE ELEMENT <i>Juraj Paulech, Vladimír Kutiš, Juraj Hrabovský, Justín Murín, Tibor Sedlár, Roman Gogola, Gabriel Gálík</i></p>	<p>Thursday, June 9 8:30-10:30</p> <p>MS 201 - 1: MICROSTRUCTURE-DRIVEN DEFORMATION AND FAILURE IN CRYSTALLINE MATERIALS <i>MS Organizers: Pilar Ariza, Lucia Nicola, Angelo Simone Chair: Pilar Ariza</i></p> <p>5436 STABILITY OF ASYMMETRIC GRAIN BOUNDARIES IN GRAPHENE <i>J.P. Mendez, F. Arca, M.P. Ariza</i></p> <p>10783 A 3D PHASE-FIELD MODEL FOR DISPLACIVE TRANSITIONS WITH FINITE ELASTOPLASTIC DEFORMATIONS: APPLICATION TO POLYMORPHISM OF IRON AT HIGH PRESSURE: <i>Aurélien Vattré, Christophe Denoual</i></p> <p>11702 MESH OBJECTIVE DAMAGE MODELING OF DUCTILE FRACTURE AT VISCO-PLASTIC CONTINUUM RESPONSE <i>Senad Razanica, Ragnar Larsson, B. Lennart Josefson</i></p> <p>11506 SOURCE DENSITY EFFECT ON INDENTATION PRESSURE RESPONSE OF THIN FILMS: A DISCRETE DISLOCATION PLASTICITY ANALYSIS <i>Yilun Xu, Daniel Balint, Daniele Dini</i></p> <p>5801 CRACK TIP MODELING OF HYDROGEN ASSISTED CRACKING: THE ROLE OF STRAIN GRADIENTS <i>Emilio Martínez-Pañeda</i></p> <p>9301 MOLECULAR DYNAMICS SIMULATIONS OF PHASE TRANSFORMATIONS IN NITI SHAPE MEMORY ALLOY BICRYSTALS <i>Prashanth Srinivasan, Lucia Nicola, Angelo Simone</i></p>	<p>Antigoni</p>
<p>5214 DEVELOPING A MECHANOBIOLOGICAL MODEL OF THE MURINE BLADDER: IN VIVO, IN VITRO AND IN SILICO MODELLING <i>Jack Hornsby, Fangzhou Cheng, Aura Kullman, Hamna Afaq, Megan Duffy, Namrata Gundiah, Lori Birder, Mark Thompson, Paul Watton</i></p> <p>5444 MODELLING THE CHEMO-MECHANOBIOLOGY OF ARTERIAL GROWTH AND REMODELLING: A 3-DIMENSIONAL, FLUID-SOLID-GROWTH SIMULATION <i>Pedro Aparicio, Namrata Gundiah, Mark S Thompson, Paul N Watton</i></p> <p>6082 SOURCES OF VISCOELASTICITY AND DAMAGE IN SOFT CONNECTIVE TISSUES: MOLECULAR AND INTERMOLECULAR MECHANISMS IN COLLAGEN FIBRILS <i>Michele Marino, René B. Svensson, Giuseppe Vairo, Peter Wriggers</i></p> <p>7448 ON THE ROLE OF FATIGUE IN TENDON: A MULTI-SCALE CONSTITUTIVE MODELLING APPROACH <i>Kevin Linka, Mikhail Itskov</i></p> <p>8863 ON EXPONENTIAL FUNCTION IN THE SOFT TISSUE CONSTITUTIVE LAWS <i>Ankush Aggarwal</i></p> <p>11842 A MICRO-MECHANICALLY BASED MODEL FOR SOFT COLLAGENOUS TISSUES <i>Mor B. Frank, Gerhard A. Holzapfel, Gal deBotton</i></p>	<p>Thursday, June 9 8:30-10:30</p> <p>MS 103 - 4: MECHANICS OF BIOLOGICAL TISSUES <i>MS Organizers: Markus Böhl, Gerhard A. Holzapfel Chair: Markus Böhl</i></p>	<p>Aphrodite</p>
<p>8762 A MASSIVELY PARALLEL FFT-BASED SOLVER TO EVALUATE STRESS LOCALIZATION IN BCC POLYCRYSTALS <i>Lionel Gélébart, Franck Ouaki, Julien Derouillat</i></p> <p>11858 USING ANDERSON ALGORITHM TO ACCELERATE FFT BASED METHODS <i>Étienne Castelier, Lionel Gélébart, Thomas Helfer</i></p> <p>11062 FOURIER-GALERKIN METHOD BASED ON EXACT INTEGRATION <i>Jaroslav Vondřejc</i></p> <p>5977 NONLINEAR COMPOSITE VOXELS AND FFT-BASED HOMOGENIZATION <i>Matthias Kabel, Andreas Fink, Felix Ospald, Matti Schneider</i></p> <p>8875 COMPARISON OF ALGORITHMS AND SOLUTION METHODS FOR CLASSIC AND PHASE-FIELD-BASED PERIODIC INHOMOGENEOUS ELASTOSTATICS <i>Jaber Rezaei Mianroodi, Pratheek Shanthraj, Bob Svendsen</i></p> <p>7917 NUMERICALLY ROBUST SPECTRAL METHODS FOR CRYSTAL PLASTICITY SIMULATIONS OF HETEROGENEOUS MATERIALS <i>Franz Roters, Pratheek Shanthraj, Martin Diehl, Philip Eisenlohr, Dierk Raabe</i></p>	<p>Thursday, June 9 8:30-10:30</p> <p>MS 711- 1: FOURIER-BASED METHODS FOR COMPUTING THE BEHAVIOR OF HETEROGENEOUS MATERIALS DEVELOPMENTS, EXTENSIONS AND APPLICATIONS <i>MS Organizers: Lionel Gélébart, Hervé Moulinec, Franz Roters, François Willot Chair: Lionel Gélébart, Hervé Moulinec</i></p>	<p>Apollo East</p>

DAY 4 – THURSDAY, JUNE 9

Thursday, June 9	Apollo West
8:30-10:30	

MS 204 - 1: IMPACT AND CRASH MECHANICS

MS Organizers: Manfred Bischoff, Fabian Dusdeck

Chair: Manfred Bischoff, Fabian Dusdeck

- 8778** KEYNOTE: OPTIMAL TOPOLOGIES OF EXTRUSION BEAMS UNDER AXIAL AND TRANSVERSAL IMPACT LOADS
Fabian Dusdeck

- 8223** A NONLINEAR REGULARIZATION MODEL FOR CONTACT CONDITIONS AND HIGHER ORDER METHODS FOR IMPACT SIMULATION
Peter Otto, Jörg F. Unger, Laura De Lorenzis

- 9968** COMPUTATIONAL MODELLING OF AIRCRAFT DITCHING WITH TWO-WAY FLUID-STRUCTURE-INTERACTION
Willem Gropengießer, Thomas Rung

Thursday, June 9	Room 1
8:30-10:30	

MS 702: MODELING OF NANOFILLED COMPOSITES

MS Organizers: Konstantinos I. Tserpes

Chair: Konstantinos I. Tserpes

- 9526** A MULTI-SCALE NUMERICAL MODEL FOR SIMULATING THE LOW-VELOCITY IMPACT RESPONSE OF CARBON NANOTUBE-REINFORCED POLYMERS
Asimina Manta, Konstantinos Tserpes

- 7538** SIMULATING ATOMIC FORCE MICROSCOPY FOR THE DETERMINATION OF THE ELASTIC PROPERTIES OF NANO PARTICLE REINFORCED EPOXY RESIN
Johannes Fankhänel, Andreas Kempe, Raimund Rolfes

- 7586** MULTI-SCALE FINITE ELEMENT ANALYSIS OF GRAPHENE/POLYMER NANOCOMPOSITES ELECTRICAL BEHAVIOR
Asimina Manta, Matthieu Gresil, Constantinos Soutis

- 7828** THERMOMECHANICAL PREDICTION OF GRAPHENE NANOCOMPOSITES
Androniki Tsiamaki, Nikolaos Anifantis

- 9883** MULTI-SCALE SIMULATION OF TENSILE BEHAVIOR OF MWNT/PP NANOCOMPOSITE
Aggeliki Chanteli, Konstantinos Tserpes, Spiros Pantelakis

- 12069** DETERMINATION OF RVE SIZE FOR RANDOM CNT REINFORCED COMPOSITES
Dimitrios Savvas, George Stefanou, Vassarion Papadopoulos, Manolis Papadrakakis

Thursday, June 9	Room 2
8:30-10:50	

MS 1208: BIFURCATIONS AND STABILITY

MS Organizers: Pekka Neittaanmäki, Nikolay Banichuk, Juha Jeronen, Tero Tuovinen

Chair: Nikolay Banichuk, Tero Tuovinen

- 6245** BIFURCATION OF AN AXIALLY MOVING PLATE SUBJECTED TO CROSS-DIRECTIONAL POTENTIAL FLOW
Tero Tuovinen, Nikolay Banichuk, Juha Jeronen

- 8009** BUCKLING OF ANNULAR PLATE JOINT WITH CIRCULAR BEAM
Sergei Filippov, Maria Boyarskaya

- 8131** ON THE STABILITY AND TRAJECTORIES OF THE DOUBLE PENDULUM WITH LINEAR SPRINGS AND DAMPERS
Juha Jeronen, Reijo Kouhia

- 11151** STABILITY OF STEEL STRUCTURES WITH CLEARANCES AND IMPERFECTION
Katarzyna Rzeszut, Andrzej Garstecki

- 6234** ON ASYMPTOTIC PROPERTIES AND BIFURCATION ANALYSIS OF IMPLICITLY GIVEN FUNCTIONALS
Nikolay Banichuk, Alexander Barsuk, Pekka Neittaanmäki, Tero Tuovinen

- 8365** THE CURL AND FLUTING OF PAPER: THE EFFECT OF ELASTO-PLASTICITY
Anna-Leena Erkkilä, Teemu Leppänen, Tero Tuovinen

- 9339** LINEAR STABILITY AND POST-BIFURCATION ANALYSIS FOR LOCALISATION OF DEFORMATION OF A ROCK LAYER WITH COSSERAT MICROSTRUCTURE
Hadrien Rattez, Ioannis Stefanou, Jean Sulem

Thursday, June 9	Room 3
8:30-10:30	

MS 409 - 3: CURRENT TRENDS IN MODELLING AND SIMULATION OF TURBULENT FLOWS

MS Organizers: Suad Jakirlić, ERCOFTAC SIG15

Chair: Suad Jakirlić

- 8987** CONTRIBUTION TO THE DEVELOPMENT OF AN R_IJ-EPSILON_IJ TURBULENCE CLOSURE
G.A. Gerolymos, I. Vallet

- 8346** ON TWO ROADBLOCKS FOR PHYSICS-BASED RANS TURBULENCE MODELING
Svetlana V. Poroseva, Scott M. Murman

- 11680** A MODIFIED SSG/LLR-OMEGA REYNOLDS STRESS MODEL FOR PREDICTING BLUFF BODY AERODYNAMICS
Csaba Klajbár, László Könözsy, Karl W. Jenkins

- 6906** NUMERICAL VALIDATION OF A FOUR PARAMETER LOGARITHMIC TURBULENCE MODEL
Daniele Cerroni, Roberto Da Vià, Sandro Manservisi, Filippo Menghini

- 7659** INFLUENCE OF A NON-LINEAR TURBULENCE MODEL EXTENSION ON THE PREDICTION OF A TURBULENT FLOW OVER A BACKWARD-FACING STEP
Tobias Schumm, Franco Magagnato, Bettina Frohnau

- 10979** A WAY TO IMPROVE JET MODELING WITHIN RANS EQUATION SYSTEM
Alexey Troshin

Thursday, June 9	Room 4
8:30-10:50	

MS 701 - 1: ADVANCED MATERIALS: COMPUTATIONAL ANALYSIS OF PROPERTIES AND PERFORMANCE

MS Organizers: Vadim V. Silberschmidt, Valery P. Matveenko

Chair: Vadim V. Silberschmidt, Valery P. Matveenko

- 7715** COMPUTATIONAL MODELLING OF MECHANICAL BEHAVIOR OF BIOLOGICAL TISSUES FOR BIOMEDICAL APPLICATIONS
Simin Li, Yang Liu, Juan Du, Begum Zeybek, Lorenzo Zani, Mark P. Lewis, Vadim V. Silberschmidt

- 4544** ON THE REINFORCEMENT OF CEMENT MORTARS THROUGH 3D PRINTED POLYMERIC AND METALLIC
Francesco Fabrocino, Ilenia Farina, Ada Amendola, Luciano Feo, Fernando Fraternali

DAY 4 – THURSDAY, JUNE 9

- 6417** AEROELASTIC STABILITY OF TWO PARALLEL FGM PLATES INTERACTING WITH FLOWING FLUID
Sergey Bochkarev, Sergey Lekomtsev, Valery Matveenko

- 7427** STRESS-ENHANCED DIFFUSION AND SURFACE EFFECTS IN LION BATTERY ELECTRODE NANOPARTICLES
Peter Stein, Bai-Xiang Xu

- 7039** A TEMPERATURE SENSITIVE CRYSTAL PLASTICITY MODEL FOR THE PREDICTION OF HIGH TEMPERATURE MECHANICAL BEHAVIOUR OF MULTI-PHASE TIAL ALLOY
Muhammad Umer Ilyas, M. Rizviul Kabir

- 7815** THE USE OF EQUIVALENT CIRCUITS FOR OPTIMIZATION OF DISSIPATIVE PROPERTIES OF ELECTROELASTIC BODIES WITH EXTERNAL ELECTRIC CIRCUITS
Dmitrii Oshmarin, Valerii Matveenko, Nataliya Sevodina, Natalia Iurlova

- 7255** NUMERICAL SIMULATION OF MULTILAYER COMPOSITE MATERIALS WITH DEFECTS UNDER STATIC LOADING
Valeriy Korepanov, Valeriy Matveenko, Grigorij Serovaev

Thursday, June 9
Room 5
8:30-10:30

MS 911 - 1: NUMERICAL METHODS IN THE MECHANICS OF GENERALIZED CONTINUA

MS Organizers: Elena Atroshchenko, Jack S. Hale, George Bourantas, Stéphane P.A. Bordas

Chair: Elena Atroshchenko

- 9921** KEYNOTE: A TRANSIENT GRADIENT DAMAGE MODEL FOR LOCALIZED BRITTLE FAILURE
Leong Hien Poh

- 5724** THE STRUCTURAL SYMMETRY WITHIN THE CONTEXT OF NONLOCAL ELASTICITY
Aurora Angela Pisano, Paolo Fuschi

- 9577** A KERNEL REDUCTION SCHEME FOR FRACTIONAL DIFFERENTIAL EQUATIONS AND DISCRETIZATION METHODS
Daniel Baffet, Jan Hesthaven

- 11097** A COMPARISON OF COMPUTATIONAL FORMATS OF GRADIENT-EXTENDED CRYSTAL VISCOPLASTICITY IN THE CONTEXT OF SELECTIVE HOMOGENIZATION
Kristoffer Carlsson, Kenneth Runesson, Magnus Ekh, Fredrik Larsson

Thursday, June 9
Room 7
8:30-10:30

MS 608: ADVANCES IN TIME INTEGRATION FOR SOLID, FLUID AND COUPLED SYSTEMS

MS Organizers: Ilinca Stanculescu, Peter Betsch
Chair: Ilinca Stanculescu, Peter Betsch

- 8082** STRUCTURE-PRESERVING OPTIMAL CONTROL OF DISCRETE MECHANICAL SYSTEMS
Peter Betsch, Christian Becker

- 10163** VARIATIONAL INTEGRATORS OF MIXED ORDER FOR DYNAMICAL SYSTEMS WITH MULTIPLE TIME SCALES AND SPLIT POTENTIALS
Theresa Wenger, Sina Ober-Blöbaum, Sigrid Leyendecker

- 7883** ENERGY AND MOMENTUM CONSERVING VARIATIONAL BASED TIME INTEGRATION OF ANISOTROPIC HYPERELASTIC CONTINUA
Michael Groß, Rajesh Ramesh, Julian Dietzsch

- 11733** CO-SIMULATION OF LARGE MBD, FEA AND DEM SYSTEMS.
Jose Ortiz, Neil MacDonald, Sophie Broad

- 6676** MIXED INTEGRATORS FOR STRUCTURE-PRESERVING SIMULATIONS IN NONLINEAR STRUCTURAL DYNAMICS
Alexander Janz, Peter Betsch, Christian Hesch

- 4537** ENERGY CONSERVING TIME INTEGRATION BASED ON GALERKIN-VARIATIONAL INTEGRATORS WITH CONSTRAINTS
Matthias Bartelt, Michael Groß

Thursday, June 9
Room 8
8:30-10:30

MS 109 - 1: ADVANCED ANALYSIS OF MATERIALS & STRUCTURAL SOLUTIONS IN SAFETY & BIOMECHANICS

MS Organizers: Jerzy Małachowski, Piotr W. Sielicki

Chair: Piotr W. Sielicki

- 10470** THE BEHAVIOUR OF A LIGHTWEIGHT ELEVATION SYSTEM UNDER IMPROVISED EXPLOSIVE DEVICE ACTION: EXPERIMENT VS. NUMERICAL VERIFICATION
Piotr W. Sielicki, Tomasz Łodygowski, Wojciech Sumelka, Karol Puk

- 11082** ON A TWO-CRITERIA OPTIMISATION IN SURGICAL MESH IMPLANTATION FOR TREATMENT OF VENTRAL HERNIA
Izabela Lubowiecka, Katarzyna Szepietowska, Agnieszka Tomaszecka, Czesław Szymczak

- 11148** HUMAN IDENTIFICATION BASED ON GAIT PARAMETERS – RECOGNITION OF PERSON AND GENDER
Tomasz Walczak, Jakub Krzysztof Grabski, Magdalena Grajewska, Martyna Michałowska

- 10425** FE MODELLING OF TIRE IN THE ASPECT OF DYNAMIC SAFETY ANALYSIS
Paweł Baranowski, Jerzy Małachowski

Thursday, June 9
Room 9
8:30-10:50

MS 709: INTEGRATED COMPUTATIONAL MATERIALS ENGINEERING - ICME

MS Organizers: Gottfried Laschet, Javier Llorca, Michele Chiumenti
Chair: Gottfried Laschet, Rajiv Shivpuri

- 9207** KEYNOTE: MUESLI: A MATERIAL UNIVERSAL LIBRARY
Ignacio Romero, David Portillo, Daniel del Pozo, Daniel Rodriguez, Javier Segurado

- 10965** KEYNOTE: MULTI-SCALE MODELING OF DIFFUSION-CONTROLLED PROCESSES DURING ULTRASONIC BONDING
Siavash Soltani-Bajestani, Maryam Gholamirad, Panthea Sepehrband

- 6075** EFFECTIVE FLOW CURVES OF FERRITE/PEARLITE MICROSTRUCTURES AND THEIR USE IN CUTTING SIMULATIONS OF STEEL GEARS
Gottfried Laschet, Viktor Kripak, Andre Texeira, Benjamin Döbbeler, Fritz Klocke, Ulrich Prahl

DAY 4 – THURSDAY, JUNE 9

11255 COUPLING THERMODYNAMIC DATABASES WITH LARGE SCALE PHASE-FIELD SIMULATIONS
Michael Selzer, Michael Kellner, Philipp Steinmetz, Johannes Hötscher, Britta Nestler

16672 MULTISCALE FRAMEWORK FOR DEFECT SENSITIVE DESIGN OF PROCESSES FOR REDUCED FAILURE RISK
Rajiv Shivpuri

Thursday, June 9 Room 10
8:30-10:30

MS 710: MODELING OF INTERFACE BEHAVIOR IN COMPOSITES

MS Organizers: Swantje Bargmann, Ingo Scheider, Andrew McBride
Chair: Ingo Scheider

11299 CONTINUUM DAMAGE MODEL SIMULATING THE FAILURE MECHANISMS IN HARD BIOLOGICAL MATERIALS: THE ROLE OF INTERFACE STRENGTH ON DAMAGE EVOLUTION.
Ingo Scheider, Songyun Ma, Swantje Bargmann

7368 A REMEDY FOR TRACTION OSCILLATIONS IN INTERFACE ELEMENTS
Erik Svensson, Martin Fagerström, Fredrik Larsson

6851 SCALAR PARAMETER ANALYSIS OF THREE-DIMENSIONAL INTERFACIAL CORNER OF JOINTED DISSIMILAR ANISOTROPIC MATERIALS
Toru Ikeda, Yuji Koga

10409 AGING OF THE FIBER-MATRIX INTERFACE IN GLASS-FIBER-REINFORCED POLYAMIDE 66 COMPOSITES – EXPERIMENTS AND MODELLING
Camilo Cruz, Matthias De Monte, Liu Yang, James Thomason

11956 A MESOSCALE APPROACH FOR MODELLING PLASTIC DEFORMATION IN INTERFACE DOMINATED MICROSTRUCTURES
Katrin Schulz, Peter Gumbsch

Thursday, June 9 Room 11
8:30-10:30

MS 918: COMPUTER ALGEBRA SYSTEMS IN MODELLING STATIC AND DYNAMIC PROBLEMS IN MECHANICS OF SOLIDS

MS Organizers: Alexander V. Matrosov, Dmitriy P. Goloskokov
Chair: Theodoros Patsios

5100 HIGH COMPUTATIONAL EFFICIENCY THROUGH GENERIC ANALYTICAL FORMULATION FOR LINEAR SOIL PRESSURE DISTRIBUTION OF RIGID SPREAD RECTANGULAR FOOTINGS
John Bellos, Nikolaos P. Bakas

5682 A REAL-SPACE MODAL ANALYSIS METHOD FOR NON-PROPORTIONAL DAMPED STRUCTURES
Evgueni Stanoev

11971 A FORCE-BASED FORMULATION FOR THE ANALYSIS OF 3-DIMENSIONAL INELASTIC STRUCTURAL FRAMES
Theodoros Patsios, Konstantinos Spiliopoulos

13932 THE FEATURES OF ANALYTICAL SOLUTIONS OF BOUNDARY VALUE PROBLEMS OF THE ELASTICITY THEORY FOR FINITE DOMAINS WITH ANGULAR POINTS OF A BOUNDARY
Alexander Kerzhaev, Mikhail Kovalenko, Irina Menshova

Thursday, June 9
8:30-10:30

Room 12

MS 1003 - 3: ADVANCES IN DESIGN OPTIMIZATION OF STRUCTURES AND MATERIALS

MS Organizers: Zhen Luo, Zhan Kang
Chair: Peter Dunning, Georgios Michailidis

7461 TOPOLOGY OPTIMIZATION WITH IMPLICIT FUNCTION AND PARAMETERIZED CUTTING SURFACE
Peter Dunning

5095 DESIGN OF ISOTROPIC MICROSTRUCTURES VIA A TWO-SCALE APPROACH
Alexis Faure, Georgios Michailidis, Rafael Estevez, Guillaume Parry, Grégoire Allaire

8286 TOPOLOGICAL SHAPE OPTIMIZATION FOR STRUCTURAL FREQUENCY RESPONSE PROBLEMS USING PARAMETRIC LEVEL SET METHOD
Hao Li, Liang Gao, Zhen Luo, Tao Wu

9589 TOPOLOGY OPTIMIZATION OF MAGNETORHEOLOGICAL (MR) FLUID LAYERS WITH SEMI-ACTIVE VIBRATION CONTROL IN A SANDWICH PLATE
Xiaopeng Zhang, Zhan Kang

Thursday, June 9
8:30-10:30

Room 15

CS 620 - 1: COMPUTATIONAL CONTACT MECHANICS

Chair: Dario Mangoni

10259 SOLVING UNILATERAL CONTACT PROBLEMS IN MULTIBODY DYNAMICS USING A PRIMAL-DUAL INTERIOR POINT METHOD
Dario Mangoni, Alessandro Tasora

10682 A FORMULATION BASED ON DIFFERENTIAL VARIATIONAL INEQUALITIES FOR DYNAMICAL PROBLEMS WITH DEFORMABLE CONTACTS
Alessandro Tasora, Dario Mangoni, Iryna Yasinskaya

5085 ANALYSIS OF IMPACT SIMULATIONS USING REDUCED FLEXIBLE MULTIBODY SYSTEMS AND QUASI-STATIC CONTACT FORCE EVALUATION
Stephan Tschigg, Robert Seifried

7959 ENHANCED ABRASION MODEL FOR TIRE TREAD WEAR
Vinh Hiep Nguyen, Peter Wriggers

10541 MASTER-SURFACE TO MASTER-SURFACE FRICTIONAL CONTACT FOR BEAM-TO-BEAM APPLICATIONS
Alfredo Gay Neto, Paulo Pimenta, Peter Wriggers

11829 APPLICATIONS OF B-DIFFERENTIAL EQUATIONS METHOD FOR THE CONTACT PROBLEMS WITH NON-MATCHING MESHES
Zhiqiang Hu

DAY 4 – THURSDAY, JUNE 9

<p>Thursday, June 9 8:30-10:30</p> <p>CS 1100: REDUCTION ORDER METHODS</p> <p><i>Chair:</i> Valery Makhavikou</p> <p>6194 EVALUATION OF LINE-FITTING METHOD OF MODEL ORDER REDUCTION <i>Valery Makhavikou, Roland Kasper, Dmitry Vlasenko</i></p> <p>7681 AN EFFICIENT ORDER REDUCTION STRATEGY IN EARTHQUAKE NONLINEAR RESPONSE ANALYSIS OF STRUCTURES <i>Franz Bamer, Abbas Kazemi Amiri, Christian Bucher</i></p> <p>11968 EXTENSION AND APPLICATION OF A NONLINEAR REDUCED ORDER MODEL TO GUST LOAD PREDICTION IN TIME DOMAIN <i>Christoph Strobach, Klemens Lindhorst, Matthias Haupt, Peter Horst</i></p> <p>7806 ACTIVE SUBSPACES FOR THE PRELIMINARY FLUID DYNAMIC DESIGN OF UNCONVENTIONAL TURBOMACHINERY <i>Sebastian Bahamonde, Matteo Pini, Piero Colonna</i></p> <p>7544 ELEMENT-BASED MODEL REDUCTION FOR PARAMETER DEPENDENT PARABOLIC PDES ON NETWORKS <i>Maximilian Walther, Günter Leugering</i></p> <p>5334 SNAPSHOT LOCATION IMPROVEMENT USING LOCAL MESH ADAPTIVITY TECHNIQUES FOR THE REDUCED MODEL APPROACH <i>Iñigo Bidaguren Diego, Lakhdar Remaki, Jesús María Blanco Ilzarbe</i></p>	<p>Room 17</p>	<p>Thursday, June 9 8:30-10:30</p> <p>MS 905 - 2: DISCONTINUOUS GALERKIN METHODS: NEW TRENDS AND APPLICATIONS</p> <p><i>MS Organizers:</i> Sonia Fernández-Méndez, Nicoletta Franchina <i>Chair:</i> Sonia Fernández-Méndez, Nicoletta Franchina</p> <p>7229 KEYNOTE: SPLITFORM DISCONTINUOUS GALERKIN SCHEMES FOR THE COMPRESSIBLE NAVIER-STOKES EQUATIONS <i>Gregor Gassner, Andrew Winters</i></p> <p>7364 COMPARISON OF CONTINUOUS AND DISCONTINUOUS METHODS IN INCOMPRESSIBLE FLUID FLOW PROBLEMS <i>Mahendra Paipuri, Sonia Fernández Méndez, Carlos Tiago</i></p> <p>5391 DISCONTINUOUS GALERKIN COMPUTATION OF GASEOUS MIXTURE COAXIAL JETS <i>Nicoletta Franchina, Marco Savini, Francesco Bassi</i></p> <p>10816 MATRIX-FREE MODIFIED EXTENDED BACKWARD DIFFERENTIATION FORMULAE APPLIED TO THE DISCONTINUOUS GALERKIN SOLUTION OF COMPRESSIBLE UNSTEADY VISCOUS FLOWS <i>Alessandra Nigro, Carmine De Bartolo, Andrea Crivellini, Francesco Bassi</i></p> <p>7694 SPACE-TIME ADAPTIVE ADER DISCONTINUOUS GALERKIN FINITE ELEMENT SCHEMES WITH A POSTERIORI SUB-CELL FINITE VOLUME LIMITING <i>Francesco Fambri, Olindo Zanotti, Michael Dumbser, Arturo Hidalgo</i></p>	<p>Room 20</p>
<p>Thursday, June 9 8:30-10:30</p> <p>MS 607 - 1: ADVANCES IN COMPUTATIONAL METHODS FOR LIQUID-VAPOR FLOWS WITH PHASE TRANSFER PROCESSES</p> <p><i>MS Organizers:</i> Rémi Abgrall, Pietro M. Congedo, Tore Flåtten, Bernhard Müller, Marica Pelanti, Maria Giovanna Rodio <i>Chair:</i> Rémi Abgrall</p> <p>6007 NUMERICAL MODELLING OF THREE-PHASE LIQUID-VAPOR-GAS FLOWS WITH THERMODYNAMIC RELAXATION <i>Marica Pelanti</i></p> <p>7880 DISPERSED PHASES IN MULTIFLUID MODELS <i>Tore Flåtten</i></p> <p>9128 A LARGE TIME STEP ROE SCHEME APPLIED TO TWO-PHASE FLOW <i>Sofia Lindqvist, Halvor Lund</i></p> <p>6494 APPLICATION OF THE LARGE TIME STEP METHOD TO THE TWO-FLUID MODEL <i>Marin Prebeg, Tore Flåtten, Bernhard Müller</i></p> <p>4854 A "SUSBONIC APPROXIMATION OF THE TWO-PHASE CONTACT" TO COMPUTE THE BAER-NUNZIATO MODEL USING A HLLC-TYPE RIEMANN SOLVER <i>Hippolyte Lochon, Frederic Daude, Pascal Galon, Jean-Marc Herard</i></p> <p>12305 MATHEMATICAL ANALYSIS AND NUMERICAL SIMULATION OF BOILING FLOWS IN NUCLEAR POWER PLANTS <i>Michaël Ndjinga, Thi Phuong Kieu Nguyen, Christophe Chalons</i></p>	<p>Room 18</p>	<p>Thursday, June 9 8:30-10:30</p> <p>MS 1215 - 1: NONLINEAR VIBRATIONS OF CONSERVATIVE AND NONCONSERVATIVE SYSTEMS: PHENOMENA AND ADVANCED NUMERICAL METHODS</p> <p><i>MS Organizers:</i> Malte Krack, Ludovic Renson, Gaëtan Kerschen <i>Chair:</i> Malte Krack</p> <p>5453 SELF-ADAPTIVITY OF A BEAM WITH SLIDING MASS UNDER HARMONIC EXCITATION <i>Malte Krack, Lawrence A. Bergman, Alexander F. Vakakis</i></p> <p>9654 REDUCED ORDER MODELS FOR DYNAMIC BEHAVIOR OF PRESTRESSED ELASTOMER DAMPING DEVICES <i>Antoine Legay, Jean-François Deü, Benjamin Morin</i></p> <p>11221 TOWARDS EXPERIMENTAL REPRODUCTION OF BACKBONE CURVES OF CONTINUOUS STRUCTURES USING SINGLE POINT FORCED EXCITATION <i>Alexander Shaw, Tom Hill, Simon Neild, Michael Friswell</i></p> <p>4914 FORCED RESPONSE OF SHROUDED BLADES WITH VARIABLE OPERATING POINTS <i>Ferhat Kaptan, Lars Panning-von Scheidt, Jörg Wallaschek, Victor Salit</i></p> <p>10962 IN-PLANE STRESSES IN AXIALLY MOVING NONLINEAR ORTHOTROPIC CONTINUA <i>Matti Kurki, Juha Jeronen, Tero Tuovinen</i></p> <p>9813 LOCALIZATION OF VIBRATORY ENERGY OF A LINEAR SYSTEM IN A CHAIN OF FOUR NONLINEAR OSCILLATORS <i>Simon Charlemagne, Claude-Henri Lamarque, Alireza Ture Savadkoohi</i></p>	<p>Room 21</p>

DAY 4 – THURSDAY, JUNE 9

<p>Thursday, June 9 8:30-10:50</p> <p>MS 1224: INNOVATIVE SOLUTIONS FOR THE SEISMIC PROTECTION OF INDUSTRIAL BUILDINGS MS Organizers: Walter Salvatore, Carlo Castiglioni, Francesco Morelli, Nikolaos Bakas Chair: Nikolaos Bakas, Francesco Morelli</p> <p>11722 PERFORMANCE-BASED NONLINEAR RESPONSE HISTORY ANALYSIS FRAMEWORK FOR THE PROINDUSTRY PROJECT CASE STUDIES <i>Marco Faggella, Raffaele Laguardia, Rosario Gigliotti, Franco Braga, Francesco Morelli, Walter Salvatore</i></p> <p>9475 REGRESSION ANALYSIS VS GENETIC ALGORITHMS: COMPUTATIONAL EFFICIENCY ASSESSMENT ON THE DESIGN OF PROINDUSTRY PROJECT SSDC ISOLATORS UNDER INCREMENTAL DYNAMIC LOADING <i>Nikolaos Bakas, John Bellas, Alper Kanyilmaz, Spyros Makridakis</i></p> <p>10247 EFFICIENCY OF SEISMIC ISOLATION ON INDUSTRIAL PLANTS - CASE STUDY OF A GAS TANK <i>José Henriques, Francesco Morelli, Bram Vandoren, Walter Salvatore, Hervé Degée</i></p> <p>8781 SEISMIC RETROFIT OF AN INDUSTRIAL STRUCTURE THROUGH AN INNOVATIVE SELF-CENTERING HYSTERETIC DAMPER: MODELLING, ANALYSIS AND OPTIMIZATION. <i>Francesco Morelli, Andrea Piscini, Walter Salvatore</i></p> <p>11993 PERFORMANCE BASED EARTHQUAKE ASSESSMENT OF AN INDUSTRIAL SILOS STRUCTURE AND RETROFIT WITH SLIDING ISOLATORS <i>Edoardo Rossi, Michelangelo Ventrella, Marco Faggella, Rosario Gigliotti, Franco Braga</i></p> <p>8876 PERFORMANCE ASSESSMENT OF SEISMIC RETROFITTING MEASURES ON SILO STRUCTURES USING INNOVATIVE SEISMIC PROTECTION SYSTEMS <i>Marius Pinkawa, Hoffmeister Benno, Feldmann Markus</i></p> <p>9498 SEISMIC RETROFIT OF INDUSTRIAL SILOS BY MEANS OF BASE ISOLATION DEVICES <i>Alper Kanyilmaz, Carlo Andrea Castiglioni, Julia Georgi</i></p>	<p>Room 22</p>
<p>Thursday, June 9 8:30-10:30</p> <p>MS 1009 - 5: ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION MS Organizers: Kyriakos C. Giannakoglou, Jens Dominik Mueller Chair: Evangelos Papoutsis-Kiachagias</p> <p>6434 ADJOINT-BASED OPTIMIZATION FRAMEWORK FOR NON-IDEAL COMPRESSIBLE FLUID FLOWS APPLIED TO ORGANIC RANKINE CYCLE TURBINES <i>Salvatore Vitale, Tim Albring, Nicolas R. Gauger, Piero Colonna, Matteo Pini</i></p> <p>7153 CAD-FREE SOFT HANDLE PARAMETERIZATION FOR ADJOINT-BASED OPTIMIZATION METHODS <i>Athanasis G. Liatsikouras, George S. Eleftheriou, Guillaume Pierrot, Mustafa Megahed</i></p> <p>7279 ON THE MULTIGRID OPTIMIZATION STRATEGY FOR CONTROL OF A TURBULENT FLOW <i>Cornelia Nita, Stefan Vandewalle, Johan Meyers</i></p> <p>8798 GEOMETRIC IMMersed BOUNDARIES (GIB): A NEW FRAMEWORK FOR APPLYING BOUNDARY CONDITIONS IN OPENFOAM® <i>Georgios Karpouzas, Eugene de Villiers</i></p> <p>6968 DEFROSTER NOZZLE SHAPE OPTIMIZATION USING THE CONTINUOUS ADJOINT METHOD <i>Lefki Germanou, Evangelos Papoutsis-Kiachagias, Antoine Delacroix, Kyriakos Giannakoglou</i></p> <p>8922 TRANSITION FROM 2D CONTINUOUS ADJOINT LEVEL SET TOPOLOGY TO SHAPE OPTIMIZATION <i>J.R.L. Koch, E.M. Papoutsis-Kiachagias, K.C. Giannakoglou</i></p>	<p>Room 23</p>

10:30-11:00
Coffee Break

SEMI-PLENARY LECTURES

Thursday, June 9 11:00-13:00	Zeus East	Thursday, June 9 11:00-13:00	Zeus North
<i>Chair:</i> Xavier Oliver		<i>Chair:</i> Ernst Rank	
2276 MODEL ORDER REDUCTION FOR MULTISCALE MODELING AND SIMULATION <i>Assyr Abdulle</i>		15672 <i>Moved to Tuesday, 11:40-12:20, Zeus North</i> ISOGEOMETRIC TECHNIQUES FOR MORTARING AND CONTACT MECHANICS <i>Annalisa Buffa</i>	
12176 ON WEAKLY-INTRUSIVE MULTI-SCALE SUBSTITUTION METHOD IN DYNAMICS: PRINCIPLE AND FIRST APPLICATIONS <i>Olivier Allix, Omar Bettinotti, Umberto Perego, Victor Oncea, Benoit Malherbe</i>		12905 <i>Start at 11:00</i> THE PHASE-FIELD APPROACH TO FRACTURE: MODELING AND COMPUTATIONAL ASPECTS <i>Laura De Lorenzis</i>	
12484 MULTI-SCALE MODELLING OF LOCALISED FAILURE PROCESSES <i>Amin Karamnejad, Bert Sluys</i>		12267 <i>Start at 12:00</i> COMPUTATIONALLY-EFFICIENT ISOGEOMETRIC k-METHOD <i>Giancarlo Sangalli</i>	
Thursday, June 9 11:00-13:00	Zeus West	Thursday, June 9 11:00-13:00	Minos East
<i>Chair:</i> George Karniadakis		<i>Chair:</i> Wolfgang A. Wall	
12288 GETTING THE MOST OUT OF COMMERCIAL CFD CODES IN PROCESS ENGINEERING ANALYSIS <i>Eleni Koronaki, Nikolaos Cheimarios, Andreas Boudouvis</i>		13777 ON THE IMPOSITION OF ESSENTIAL BOUNDARY CONDITIONS ON NON-MATCHING FINITE ELEMENT MESHES <i>Ramon Codina</i>	
12202 HEMODYNAMICS OF BIOLOGIC AND MECHANICAL PROSTHETIC HEART VALVES <i>Roberto Verzicco, Marco D. de Tullio</i>		5426 COMPUTATIONAL TIME REVERSAL AND DAMAGE IDENTIFICATION <i>Dan Givoli, Eli Turkel, Eyal Amitt</i>	
15978 CONTINUOUS ADJOINT-BASED OPTIMIZATION IN FLUID MECHANICS & AERODYNAMICS: RECENT PROGRESS AND APPLICATIONS <i>Kyriakos C. Giannakoglou, E.M. Papoutsis-Kiachagias, I.S. Kavvadias</i>		16497 EFFICIENT TECHNIQUES FOR THE MODEL ORDER REDUCTION OF PARAMETRIZED PROBLEMS IN COMPUTATIONAL FLUID AND SOLID MECHANICS <i>Federico Negri</i>	
Thursday, June 9 11:00-13:00	Minos North	Thursday, June 9 11:00-13:00	Minos North
<i>Chair:</i> Pedro Diez		<i>Chair:</i> Pedro Diez	
		16779 A NEW FRAMEWORK FOR LARGE STRAIN ELECTROMECHANICS BASED ON CONVEX MULTI-VARIABLE STRAIN ENERGIES <i>Antonio J. Gil, R. Ortigosa</i>	
		16774 INTRODUCTION AND SOME RECENT ADVANCES ON THE VIRTUAL ELEMENT METHOD <i>Lourenco Beirao da Veiga</i>	
		16509 COMPUTATIONAL MULTISCALE METHODS FOR TURBULENT SINGLE- AND TWO-PHASE FLOWS <i>Ursula Rasthofer</i>	

13:00-14:30
Lunch Break

TECHNICAL SESSIONS

Thursday, June 9	Zeus East
14:30-16:30	

MS 403 - 3: PARTICLE-BASED METHODS IN FLUID MECHANICS

MS Organizers: Sergio Idelsohn, Eugenio Oñate

Chair: Umberto Perego, Massimiliano Cremonesi

- 16535 KEYNOTE: ADVANCES IN THE PARTICLE FINITE ELEMENT METHOD FOR MULTIDISCIPLINARY PROBLEMS**
Eugenio Oñate, Sergio Idelsohn

- 10839 A NUMERICAL INVESTIGATION OF FLOW DYNAMICS OVER A TRAPEZOIDAL SMOOTH OPEN CHANNEL**
Giacomo Viccione

- 10842 A NUMERICAL INVESTIGATION OF LIQUID IMPACT ON PLANAR SURFACES.**
Giacomo Viccione, Vittorio Bovolin, Eugenio Pugliese Carratelli

- 11373 AERODYNAMICS OF AN UNSTEADY PARTICLE FLOW IN THE CHUTE**
Olga Averkova, Ivan Logachev, Konstantin Logachev

- 5267 DYNAMICS OF DUST PARTICLES NEAR THE ROUND BELL SUCTION INLET**
Olga Averkova, Konstantin Logachev, Artur Logachev, Elena Tolmacheva

Thursday, June 9	Zeus West
14:30-16:30	

MS 708: INELASTIC PROCESSES IN HETEROGENEOUS MATERIALS

MS Organizers: Hermann G. Matthies, Adnan Ibrahimbegović

Chair: Adnan Ibrahimbegović

- 6540 KEYNOTE: THE RÔLE OF STOCHASTIC IDENTIFICATION IN MULTI-SCALE MODELLING OF HETEROGENEOUS MATERIALS**
Hermann G. Matthies

- 10533 VIRTUAL-POWER-BASED QUASICONTINUUM METHODS FOR DISCRETE DISSIPATIVE MATERIALS**
Lars Beex

MS 807: ADVANCED COMPUTATIONAL STRATEGIES FOR MODELLING, SIMULATION AND CHARACTERISATION OF MULTI-SCALE HETEROGENEOUS MATERIALS

MS Organizers: Stéphane Bordas, Daniel Dias-da-Costa, Fabrice Pierron, Timon Rabczuk, Pierre Kerfriden, Pascal Lava

Chair: Daniel Dias-da-Costa

- 6259 MODELING OF MATRIX PLASTICITY AND FAILURE IN COMPOSITES ACROSS THE SCALES**
Frans van der Meer

- 10908 GUARANTEED ERROR BOUNDS FOR RVE BASED HOMOGENISATION**
Daniel Alves Paladim, Pierre Kerfriden, Stephane Bordas

- 10914 VALIDATION OF A DISCRETE CRACK MODEL FOR LIGHTWEIGHT AGGREGATE CONCRETE BEAMS**
Daniel Dias-da-Costa, R. Graça-e-Costa, R.N.F. Carmo

Thursday, June 9	Zeus North
14:30-16:30	

MS 901 - 7: ISOGEOMETRIC METHODS

MS Organizers: Yuri Bazilevs, David J. Benson, Rene De Borst, Thomas

J.R. Hughes, Trond Kvamsdal, Alessandro Reali,

Giancarlo Sangalli, Clemens V. Verhoosel

Chair: Clemens V. Verhoosel

- 4533 KEYNOTE: ISOGEOMETRIC ANALYSIS SUITABLE TRIVARIATE MODELS FROM CUBOID DECOMPOSITION QUADRANGULATION**
Hassan Al Akhras, Thomas Elguedj, Anthony Gravouil, Michel Rochette

- 9818 ISOGEOMETRIC COLLOCATION: TREATMENT OF NEARLY-INCOMPRESSIBILITY IN LARGE DEFORMATION ELASTICITY**
Roland Kruse, Frederik Fahrendorf, Laura De Lorenzis

- 9041 ISOGEOMETRIC ANALYSIS OF ACOUSTIC SCATTERING USING INFINITE ELEMENTS**
Jon Vegard Venås, Trond Kvamsdal, Trond Jenserud

- 8908 A DESIGN-BY-ANALYSIS TOOL FOR FILAMENT-WOUND THICK-WALLED COMPOSITE PRESSURE VESSELS BASED ON ISOGEOMETRIC ANALYSIS**
Jörg B. Multhoff

- 7680 IMPLEMENTATION OF IGA INTO A COMMERCIAL FEA SOFTWARE FOR HIGHER-ORDER CONTINUUM MECHANICS PROBLEMS**
Sergei Khakalo, Jarkko Niiranen, Viacheslav Balobanov

Thursday, June 9	Minos East
14:30-16:30	

MS 602 - 3: INNOVATIVE METHODS FOR FLUID-STRUCTURE-INTERACTION

MS Organizers: E. Harald van Brummelen, Roger Ohayon, Trond Kvamsdal

Chair: E. Harald van Brummelen

- 8141 PARTITIONED FLUID-STRUCTURE INTERACTION ON DISTRIBUTED DATA**
Benjamin Uekermann, Florian Lindner, Miriam Mehl, Klaudius Scheufele

- 6182 THREE-DIMENSIONAL FLUID STRUCTURE INTERACTION BETWEEN A COMPRESSIBLE FLUID AND A FRAGMENTING STRUCTURE WITH A CONSERVATIVE IMMERSSED BOUNDARY METHOD**
Maria Adela Puscas, Laurent Monasse, Alexandre Ern, Christian Mariotti, Christian Tenaud

- 10755 NUMERICAL MODELING OF FLOW-DRIVEN PIEZOELECTRIC ENERGY HARVESTERS**
Srivathsan Ravi, Andreas Zilian

- 10856 SIMULATION OF ELASTO-CAPILLARY INTERACTIONS OF SOFT MATERIALS USING DIFFUSE INTERFACE MODELS**
Mahnaz Shokrpour, E. Harald van Brummelen, Gertjan van Zwieten, Herman M.A. Wijshoff

- 7573 ROBUST QUASI-NEWTON METHODS FOR THE COUPLING OF PARTITIONED FSI SIMULATIONS**
Klaudius Scheufele, Miriam Mehl, Benjamin Uekermann

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<p>Thursday, June 9</p> <p>14:30-16:30</p>	<p>Minos North</p>	<p>8117 A PARTITIONED NUMERICAL SCHEME FOR THE INTERACTION BETWEEN BLOOD, ARTERIAL WALL AND THROMBUS <i>Martina Bukac</i></p> <p>9269 PARALLEL ALGORITHMS FOR FLUID AND RIGID BODY INTERACTION APPLIED TO BIOMECHANICS PROBLEMS <i>Cristóbal Samaniego, Guillaume Houzeaux, Mariano Vázquez</i></p> <p>8619 A FENICS-HPC FRAMEWORK FOR MULTI-COMPARTMENT BLOCH-TORREY MODELS <i>Dang Van Nguyen, Johan Jansson, Johan Hoffman</i></p>
<p>MS 614 - 1: YOUNG INVESTIGATORS MINISYMPOSIUM</p> <p><i>MS Organizers:</i> Jaan-Willem Simon, Alexander Popp, Joan Baiges <i>Chair:</i> Alexander Popp</p> <p>9853 A NANO-MACRO BOTTOM-UP APPROACH TOWARDS BRITTLE FRACTURE <i>Sandeep Patil, Yousef Heider, Carlos Hernandez Padilla, Eduardo Cruz Chu, Bernd Markert</i></p> <p>11944 SOME RECENT ADVANCES IN DIRECT METHODS FOR LIMIT STATES OF ENGINEERING MATERIALS <i>Geng Chen, Konstantinos Nikolaou, Christoph Broeckmann, Dieter Weichert, Christos Bisbos</i></p> <p>10280 DESIGN PROCESS OF A BIOMIMETIC FAÇADE ELEMENT INSPIRED BY THE CARNIVOROUS PLANT ALDROVANDA VESICULOSA <i>Renate Sachse, Axel Körner, Manfred Bischoff, Jan Knippers</i></p> <p>9906 BAYESIAN APPROACH VS. PROBABILITY BOXES FOR MECHANICAL COMPUTATIONS CONSIDERING UNCERTAINTIES <i>Amélie Fau, Bojana Rosić</i></p>	<p>Thursday, June 9</p> <p>14:30-16:30</p>	<p>Europa</p>
<p>Thursday, June 9</p> <p>14:30-16:30</p>	<p>Minos South</p>	<p>CS 630 - 3: SIMULATION OF FLUID-STRUCTURE INTERACTION</p> <p><i>Chair:</i> Koulis Pericleous</p> <p>11358 DISPERSION OF NANO PARTICLES IN MELTS USING ELECTROMAGNETIC WAVE ACTION <i>Valdis Bajarevics, Georgi Djambazov, Bruno Lebon, Anton Manoylov, Koulis Pericleous, David Burnard, William Griffiths, Dmytro Shevchenko</i></p> <p>5264 DIRECT EDDY CURRENT METHOD FOR VOLUMETRIC FLAWS OF CYLINDRICAL SHAPE <i>Valentina Koliskina, Andrei Kolyshkin, Rauno Gordon, Olev Märtens</i></p> <p>6498 MATHEMATICAL MODELING AND NUMERICAL SIMULATION OF MAGNETOELASTIC COUPLING <i>Mané Harutyunyan, Bernd Simeon</i></p> <p>5825 MODELLING OF INTERFACE ELASTICITY EFFECTS IN METAL-POLYMER ACTUATORS <i>Jana Wilmers, Andrew McBride, Swantje Bargmann</i></p> <p>4678 3D DRBEM MODELING FOR ROTATING INITIALLY STRESSED ANISOTROPIC FUNCTIONALLY GRADED PIEZOELECTRIC PLATES <i>Mohamed Abdelsabour Fahmy</i></p>
<p>Thursday, June 9</p> <p>14:30-16:30</p>	<p>Danae</p>	<p>Thursday, June 9</p> <p>14:30-16:30</p>
<p>MS 1204 - 1: NONLINEAR DYNAMICS OF ROTATING STRUCTURES</p> <p><i>MS Organizers:</i> Evangeline Capiez-Lernout, Marc P. Mignolet, Christian Soize <i>Chair:</i> Christian Soize</p> <p>8090 COMPUTATIONAL MODELING STRATEGIES FOR THE NONLINEAR MISTUNING OF AN INDUSTRIAL BLADED DISK. <i>Evangélène Capiez-Lernout, Christian Soize, Moustapha Mbaye</i></p> <p>8946 COMBINING FINITE ELEMENT ANALYSIS AND ANALYTICAL MODELLING FOR EFFICIENT SIMULATIONS OF NON-LINEAR GEAR DYNAMICS <i>Shadi Sweiki, Jakub Korta, Antonio Palermo, Rocco Adduci, Domenico Mundo</i></p> <p>10382 DAMPING INDUCED BY DRY FRICTION: ANALYSES AND EXPERIMENTS FOR MODELING IMPROVEMENT <i>Marc-André Douville, Béatrice Faverjon, Eric Chatelet, Georges Jacquet-Richardet</i></p> <p>7831 MODAL IDENTIFICATION BASED FLOATING FRAME OF REFERENCE FORMULATION OF SMALL-SIZE WIND TURBINE <i>Ayman A. Nada</i></p> <p>6781 DELAYED FEEDBACK CONTROL METHOD FOR CALCULATING SPACE-TIME PERIODIC SOLUTIONS OF VISCOELASTIC PROBLEMS <i>Ustim Khristenko, Patrick Le Tallec</i></p>	<p>MS 904 - 2: ADVANCED MINIMIMAL RESIDUAL DISCRETIZATION</p> <p><i>MS Organizers:</i> Carsten Carstensen, Dietmar Gallistl <i>Chair:</i> Dietmar Gallistl</p> <p>7642 LOW-ORDER DPG-FEMS FOR LINEAR ELASTICITY <i>Friederike Hellwig, Carsten Carstensen</i></p> <p>8521 A STABLE DPG METHOD FOR THE TRANSPORT EQUATION <i>Dirk Broersen, Wolfgang Dahmen, Rob Stevenson</i></p> <p>7721 A LOW-ORDER DISCONTINUOUS PETROV GALERKIN FEM FOR STOKES <i>Carsten Carstensen, Sophie Louise Puttkammer</i></p> <p>7970 LEAST-SQUARES MIXED FINITE ELEMENTS IN RELATION TO MIXED FINITE ELEMENTS FOR ELASTICITY <i>Fleurianne Bertrand, Zhiqiang Cai</i></p>	<p>Leda</p>
<p>MS 108 - 1: NUMERICAL METHODS FOR COUPLED PROBLEMS IN BIOMEDICAL APPLICATIONS</p> <p><i>MS Organizers:</i> Martina Bukac, Annalisa Quaini <i>Chair:</i> Annalisa Quaini</p> <p>11735 KEYNOTE: A MODEL FOR DRUG TRANSPORT IN TUMOR <i>Milos Kojic, Miljan Milosevic, Vladimir Simic, Mauro Ferrari, Eugene J. Koay, Arturias Ziemys</i></p>	<p>ECCOMAS Congress 2016 – Programme</p>	<p>131</p>

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<p>Thursday, June 9 14:30-16:50</p> <p>STS 7: MORPHING TECHNOLOGIES FOR AIRCRAFT WINGS STS Organizers: Hans Peter Monner Chair: Hans Peter Monner</p> <p>14433 DEVELOPMENT AND ASSESSMENT OF THE ENHANCED ADAPTIVE DROOP NOSE IN THE SARISTU PROJECT <i>Markus Kintscher, Johannes Kirn</i></p> <p>14447 WINGTIP ACTIVE TRAILING EDGE FOR LOADS ALLEVIATION <i>Andreas Wildschek, Stefan Storm, Johannes Kirn</i></p> <p>14442 AN ADAPTIVE TRAILING EDGE FOR LARGE COMMERCIAL AIRCRAFT <i>Antonio Concilio, Ignazio Dimino, Rosario Pecora</i></p>	<p>Artemis</p>	<p>Thursday, June 9 14:30-16:30</p> <p>MS 201 - 2: MICROSTRUCTURE-DRIVEN DEFORMATION AND FAILURE IN CRYSTALLINE MATERIALS MS Organizers: Pilar Ariza, Lucia Nicola, Angelo Simone Chair: Lucia Nicola, Pilar Ariza</p> <p>9366 LONG-TERM ATOMISTIC SIMULATION OF LITHIATION IN SILICON-BASED LITHIUM BATTERIES <i>Juan Pedro Mendez Granado, M. Ortiz</i></p> <p>7493 NUMERICAL MODEL FOR A DISLOCATION INDUCED INTERFACE DECOHESION USING A PEIERLS-NABARRO APPROACH <i>Franz Bormann, Ron Peerlings, Marc Geers</i></p> <p>7527 INVESTIGATION OF CREEP AND LOAD SHEDDING IN POLYCRYSTALLINE TITANIUM ALLOYS USING DISCRETE DISLOCATION PLASTICITY <i>Zebang Zheng, Daniel Balint, Fionn Dunne</i></p> <p>8723 LONG-TERM ATOMISTIC ANALYSIS OF HYDROGEN DIFFUSION IN NANOMATERIALS <i>Xingsheng Sun, Pilar Ariza, Kevin Wang</i></p> <p>9188 DEVELOPMENT AND RELAXATION OF INTRINSIC STRESS FOR THIN FILMS DEPOSITED ON A SUBSTRATE: A DISCRETE DISLOCATION FRAMEWORK <i>Can Ayas</i></p> <p>8943 GREEN'S FUNCTION MOLECULAR DYNAMICS MEETS DISCRETE DISLOCATION PLASTICITY <i>Syam Venugopalan, Lucia Nicola</i></p>	<p>Antigoni</p>
<p>STS 8: SIMULATION AND VALIDATION OF COMPOSITE STRUCTURES IN AERONAUTICS STS Organizers: Piet Woelkens Chair: Martin Bach</p> <p>14476 VALIDATION & VERIFICATION OF PROBABILITY OF DETECTION USING GUIDED WAVES ON THE EXAMPLE OF A LARGE, COMPLEX CFRP STRUCTURE <i>Martin Bach, N. Dobmann, B. Eckstein, M. Moix Bonet, B. Newman</i></p> <p>14464 STRUCTURAL HEALTH MONITORING FOR THE MAINTENANCE OF AIRCRAFTS <i>Alessandro Marzani, L. De Marchi, A. Apicella</i></p> <p>14461 DAMAGE TOLERANCE AND ELECTRICAL IMPROVEMENT OF COMPOSITE STRUCTURES <i>Sonia Flórez Fernandez, Idoia Gaztelumendi, J. Gayoso</i></p>	<p>Artemis</p>	<p>Thursday, June 9 14:30-16:50</p> <p>MS 201 - 2: MICROSTRUCTURE-DRIVEN DEFORMATION AND FAILURE IN CRYSTALLINE MATERIALS MS Organizers: Pilar Ariza, Lucia Nicola, Angelo Simone Chair: Lucia Nicola, Pilar Ariza</p> <p>9366 LONG-TERM ATOMISTIC SIMULATION OF LITHIATION IN SILICON-BASED LITHIUM BATTERIES <i>Juan Pedro Mendez Granado, M. Ortiz</i></p> <p>7493 NUMERICAL MODEL FOR A DISLOCATION INDUCED INTERFACE DECOHESION USING A PEIERLS-NABARRO APPROACH <i>Franz Bormann, Ron Peerlings, Marc Geers</i></p> <p>7527 INVESTIGATION OF CREEP AND LOAD SHEDDING IN POLYCRYSTALLINE TITANIUM ALLOYS USING DISCRETE DISLOCATION PLASTICITY <i>Zebang Zheng, Daniel Balint, Fionn Dunne</i></p> <p>8723 LONG-TERM ATOMISTIC ANALYSIS OF HYDROGEN DIFFUSION IN NANOMATERIALS <i>Xingsheng Sun, Pilar Ariza, Kevin Wang</i></p> <p>9188 DEVELOPMENT AND RELAXATION OF INTRINSIC STRESS FOR THIN FILMS DEPOSITED ON A SUBSTRATE: A DISCRETE DISLOCATION FRAMEWORK <i>Can Ayas</i></p> <p>8943 GREEN'S FUNCTION MOLECULAR DYNAMICS MEETS DISCRETE DISLOCATION PLASTICITY <i>Syam Venugopalan, Lucia Nicola</i></p>	<p>Antigoni</p>

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MS 711- 2: FOURIER-BASED METHODS FOR COMPUTING THE BEHAVIOR OF HETEROGENEOUS MATERIALS DEVELOPMENTS, EXTENSIONS AND APPLICATIONS <i>MS Organizers:</i> Lionel Gélibart, Hervé Moulinec, Franz Roters, François Willot <i>Chair:</i> Franz Roters, François Willot	8432 NUMERICAL MODELLING OF SURFACE WAVES IN THE FRAMEWORK OF THE SHALLOW WATER MODEL <i>Nina Shokina, Gayaz Khakimzyanov</i>	
8909 FFT-SCHEMES FOR SOLVING HEAT CONDUCTIVITY PROBLEMS WITH UNIFORM BOUNDARY CONDITIONS <i>François Willot, Haisheng Wang</i>		MS 615: COMPUTATIONAL MODELS IN MAGNETOHYDRODYNAMICS <i>MS Organizers:</i> Oleg Zikanov
10165 ON THE CONVERGENCE TEST OF FFT-BASED METHODS <i>Graeme Milton, Hervé Moulinec, Pierre Suquet</i>	9799 LARGE EDDY SIMULATIONS OF MAGNETIC FIELD EFFECT ON TURBULENT FLOW IN A SQUARE DUCT <i>Jie Mao, Kunlei Zhang, Zhongquan Tan, Ke Liu</i>	10250 NUMERICAL SIMULATION OF THE FLUID FLOW IN CONTINUOUS CASTING MOLD CONTROLLED BY A COMBINATION OF ELECTROMAGNETIC FIELD <i>Engang Wang, Fei Li, Zhuang Li, Lin Xu, Anyuan Deng</i>
8401 CONTINUUM DISLOCATION MECHANICS FIELD EQUATIONS SOLVED BY FFT METHODS <i>Djaka Komlan Sénam, Taupin Vincent, Berbenni Stéphane, Fressengeas Claude</i>		
10781 A GALERKIN VIEW ON FFT-BASED HOMOGENIZATION METHODS <i>Jan Zeman, Jaroslav Vondřejc, Ivo Marek, Nachiketa Mishra, Tom de Geus, Ron Peerlings, Marc Geers</i>		
7442 FFT-BASED SOLUTION: A COMPLEX METHOD MADE SIMPLE (EVEN FOR 3-D FINITE STRAIN) <i>Tom de Geus, Ron Peerlings, Jaroslav Vondřejc, Jan Zeman, Marc Geers</i>		
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MS 204 - 2: IMPACT AND CRASH MECHANICS <i>MS Organizers:</i> Manfred Bischoff, Fabian Dудdeck <i>Chair:</i> Manfred Bischoff, Fabian Dудdeck	8240 ACOUSTIC SIMULATION USING VIRTUAL REALITY TECHNOLOGY <i>Kazuo Kashiyma, Toru Yoshimachi, Riichiro Okamura, Kazuhiro Nakamura, Anri Ishida</i>	Room 2
11054 EVOLUTIONARY LEVEL SET METHOD FOR CRASHWORTHINESS TOPOLOGY OPTIMIZATION <i>Mariusz Bujny, Nikola Aulig, Markus Olhofer, Fabian Dудdeck</i>	10208 INTEGRATION OF A STORM SURGE MODEL INTO A COMPUTATIONAL FRAMEWORK FOR CRISIS MAPPING <i>Molly Moran, Ethan J. Kubatko</i>	
11243 AN ACCURATE, EFFICIENT, AND ROBUST CONTACT DETECTION PROCEDURE IN ISOGEOMETRIC CONTACT ANALYSIS <i>Ján Kopačka, Dušan Gabriel, Radek Kolman, Jiří Plešek</i>	11207 A COMPARISON OF MESH MOVEMENT SCHEMES WITH APPLICATION TO ENVIRONMENTAL FLUID DYNAMICS PROBLEMS <i>Benjamin Yeager, Matthew Piggott, Juan Rattia, Timothy McManus, Paul Holland</i>	
6072 A SIMPLIFIED MODEL OF A STEEL COLUMN SUBJECTED TO IMPACT <i>Piseth Heng, Mohammed Hjaj, Jean-Marc Battini</i>	10143 MULTI-LEVEL HP-ADAPTIVITY AND THE FINITE CELL METHOD FOR FLUID PROBLEMS <i>Philipp Kopp, Nils Zander, Stefan Kollmannsberger, Ernst Rank</i>	
7007 MATERIAL MODELLING OF CAST ALUMINIUM BY APPLICATION OF THE WILKINS DAMAGE MODEL <i>Christian Mühlstätter, Matthias Hartmann</i>	10066 MODELLING PARTICLE ENTRAINMENT IN MOUNTAIN TORRENTS: LINKING TURBULENCE TO LOCAL BED GEOMETRY AND TO THE GRAIN SURFACE <i>Albrecht von Boetticher, James Kirchner, Stefan Pirker, Helmut Habersack, Nikolai Kornev</i>	
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MS 412: NUMERICAL METHODS FOR WAVES AND FLOWS IN COASTAL AND DEEP WATER HYDRODYNAMICS <i>MS Organizers:</i> Nina Shokina, Yuri Shokin, Leonid Chubarov, Gayaz Khakimzyanov, Vadym Aizinger, Denys Dutykh <i>Chair:</i> Nina Shokina	6359 NEW ALGORITHM FOR NUMERICAL SIMULATION OF SURFACE WAVES WITHIN THE FRAMEWORK OF THE FULL NONLINEAR DISPERSIVE MODEL <i>Zinaida Fedotova, Oleg Gusev, Gayaz Khakimzyanov</i>	MS 603 - 1: COMPUTATIONAL METHODS IN FLUID-STRUCTURE INTERACTION WITH IMPACT ON INDUSTRIAL APPLICATIONS <i>MS Organizers:</i> Elisabeth Longatte, Yannick Hoarau, Marianna Braza <i>Chair:</i> Elisabeth Longatte, Yannick Hoarau, Marianna Braza
8456 DISCONTINUOUS GALERKIN METHOD FOR COASTAL OCEAN <i>Vadym Aizinger</i>	6769 SLAMMING IMPACT SIMULATION OF 2D WATER ENTRY FOR RIGID STRUCTURES <i>Omar Hashim Al-Dodoe, Mostapha Tarfaoui</i>	Room 3

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<p>9425 A PATH-CONSERVATIVE OSHER-TYPE SCHEME FOR AXIALLY SYMMETRIC COMPRESSIBLE FLOWS IN FLEXIBLE TUBES <i>Julia Leibinger, Michael Dumbser, Uwe Iben</i></p> <p>8479 TRANSIENT MODELLING OF THE FLUID-STRUCTURE INTERACTION OF WIND TURBINES WITH COMPOSITE BLADES <i>Gilberto Santo, Mathijis Peeters, Wim Van Paepgem, Joris Degroote</i></p> <p>10071 FLUID-STRUCTURE INTERACTION WITHIN AN ARRAY OF TUBES WITH OVERSET GRID APPROACH. <i>Anthony Ponce, Vilas Shinde, Yannick Hoarau, Elisabeth Longatte, Franck Baj, Marianna Braza</i></p> <p>13692 A NUMERICAL STUDY OF FLUID-STRUCTURE INTERACTION IN A TANDEM OF CYLINDERS CONFIGURATIONS AT HIGH REYNOLDS NUMBER <i>Damien Szubert, Thibaut Deloze, Yannick Hoarau, Elisabeth Longatte, A. Aalilija, Y. Boutrif, Chrisophe Heudes, Marianna Braza</i></p>	<p>Thursday, June 9 14:30-16:30</p> <p>MS 911 - 2: NUMERICAL METHODS IN THE MECHANICS OF GENERALIZED CONTINUA <i>MS Organizers: Elena Atroshchenko, Jack S. Hale, George Bourantas, Stéphane P.A. Bordas</i> <i>Chair: Leong Hien Poh</i></p> <p>11076 CRACK-INCLUSION INTERACTION IN PLANE MICROPOLAR ELASTICITY <i>Elena Atroshchenko, Javier Videla</i></p> <p>7675 ISOGEOOMETRIC ANALYSIS OF GRADIENT-ELASTIC TIMOSHENKO BEAMS <i>Viacheslav Balobanov, Jarkko Niiranen, Sergei Khakalo</i></p> <p>9170 ISOGEOOMETRIC GALERKIN METHODS FOR GRADIENT-ELASTIC BARS, BEAMS, MEMBRANES AND PLATES <i>Jarkko Niiranen, Sergei Khakalo, Viacheslav Balobanov, Josef Kiendl, Antti H. Niemi, Bahram Hosseini, Alessandro Reali</i></p>	Room 5
<p>Thursday, June 9 14:30-16:30</p> <p>MS 701 - 2: ADVANCED MATERIALS: COMPUTATIONAL ANALYSIS OF PROPERTIES AND PERFORMANCE <i>MS Organizers: Vadim V. Silberschmidt, Valery P. Matveenko</i> <i>Chair: Valery P. Matveenko, Vadim V. Silberschmidt</i></p> <p>6820 THEORETICAL MODELS AND NUMERICAL SIMULATION OF NONLINEAR BEHAVIOR OF COMPOSITE MATERIALS <i>Lomakin Evgeny, Fedulov Boris</i></p> <p>7575 LAYOUT OPTIMIZATION OF PIEZOELECTRIC ELEMENTS WITH EXTERNAL ELECTRIC CIRCUITS IN SMART CONSTRUCTIONS BASED ON SOLUTION OF THE NATURAL VIBRATIONS PROBLEM <i>Nataliia Iurlova, Valerii P. Matveenko, Dmitriy A. Oshmarin, Nataliya V. Sevodina, Maksim A. Yurlov</i></p> <p>7616 DETERMINATION OF OPTIMAL PARAMETERS FOR A PASSIVE RL-CIRCUIT BY SOLVING THE PROBLEM ON NATURAL VIBRATIONS OF ELECTROELASTIC BODIES <i>Maksim Yurlov, Valerii P. Matveenko, Dmitriy A. Oshmarin, Nataliya V. Sevodina, Nataliya A. Iurlova</i></p> <p>11059 SEVEN DIFFERENT WAYS TO MODEL VISCOELASTICITY IN A GEOMETRICALLY EXACT SETTING <i>Alexey Shutov</i></p> <p>7871 ANALYSIS OF FIBRE BRAGG GRATINGS SENSORS OPTIMAL PLACEMENT FOR MONITORING OF DAMAGE PROPAGATION IN LAMINATE COMPOSITES <i>Mikhail Tashkinov</i></p> <p>9462 NUMERICAL SIMULATION OF MULTILAYER COMPOSITE MATERIALS WITH DEFECTS UNDER STATIC LOADING <i>Valeriy Korepanov, Valeriy Matveenko, Grigoriy Serovaev</i></p>	<p>MS 912 - 1: HIGH-ORDER METHODS, SENSITIVITY ANALYSIS AND ADAPTATION FOR THE NAVIER STOKES EQUATIONS <i>MS Organizers: Vincent Couaillier, Rémi Abgrall, Eusebio Valero</i> <i>Chair: Vincent Couaillier</i></p> <p>5698 ADAPTATION STRATEGIES FOR HIGH ORDER DISCONTINUOUS GALERKIN METHODS BASED ON TAU-ESTIMATION <i>Eusebio Valero, Moritz Kompenhans, Gonzalo Rubio, Esteban Ferrer</i></p> <p>11051 APPROPRIATE COMBINATIONS OF CONTROLLERPARAMETERS FOR UNSTEADY FLOWS IMULATIONS WITH ADAPTIVE TIME STEP CONTROL <i>Kathrin Kozulovic, Graham Ashcroft</i></p>	Room 4
<p>Thursday, June 9 14:30-16:30</p> <p>MS 1225 - 1: SEISMIC PERFORMANCE ASSESSMENT OF STRUCTURES AND SEISMIC RISK MITIGATION STRATEGIES <i>MS Organizers: Marco Vona</i> <i>Chair: Marco Vona</i></p> <p>10028 A CRITICAL REVIEW OF FRAGILITY CURVES FOR EXISTING RC BUILDINGS <i>Monica Mastroberti, Marco Vona</i></p> <p>10800 DYNAMIC IDENTIFICATION OF A RC HOSPITAL BUILDING <i>Giorgio Lacanna, Pauline Deguy, Maurizio Ripepe, Massimo Baglione, Mario De Stefano, Marco Tanganeli, Stefania Viti</i></p> <p>12031 TOWARDS INTEGRATED SEISMIC RISK ASSESSMENT IN PALESTINE - APPLICATION TO THE CITY OF NABLUS <i>Ricardo Monteiro, Paola Ceresa, Vania Cerchiello, Jamal Dabeek, Antonella Di Meo, Barbara Borzi</i></p> <p>11825 COMPUTER-AIDED SEISMIC RISK ASSESSMENT AT URBAN SCALE. MODEL DEFINITION AND VALIDATION ON A CASE STUDY <i>Alberto Basaglia, Alessandra Aprile, Francesco Pilla, Enrico Spaccone</i></p> <p>11992 PARAMETRIC CHARACTERIZATION OF ITALIAN RC BRIDGES FOR SEISMIC VULNERABILITY ASSESSMENT <i>Claudia Zelaschi, Ricardo Monteiro, Rui Pinho</i></p> <p>8224 PROBABILISTIC SEISMIC DAMAGE CONTROL ANALYSIS OF SUB-STANDARD BRIDGE COLUMNS <i>M. Saiid Saiidi</i></p>	<p>MS 1225 - 1: SEISMIC PERFORMANCE ASSESSMENT OF STRUCTURES AND SEISMIC RISK MITIGATION STRATEGIES <i>MS Organizers: Marco Vona</i> <i>Chair: Marco Vona</i></p> <p>10028 A CRITICAL REVIEW OF FRAGILITY CURVES FOR EXISTING RC BUILDINGS <i>Monica Mastroberti, Marco Vona</i></p> <p>10800 DYNAMIC IDENTIFICATION OF A RC HOSPITAL BUILDING <i>Giorgio Lacanna, Pauline Deguy, Maurizio Ripepe, Massimo Baglione, Mario De Stefano, Marco Tanganeli, Stefania Viti</i></p> <p>12031 TOWARDS INTEGRATED SEISMIC RISK ASSESSMENT IN PALESTINE - APPLICATION TO THE CITY OF NABLUS <i>Ricardo Monteiro, Paola Ceresa, Vania Cerchiello, Jamal Dabeek, Antonella Di Meo, Barbara Borzi</i></p> <p>11825 COMPUTER-AIDED SEISMIC RISK ASSESSMENT AT URBAN SCALE. MODEL DEFINITION AND VALIDATION ON A CASE STUDY <i>Alberto Basaglia, Alessandra Aprile, Francesco Pilla, Enrico Spaccone</i></p> <p>11992 PARAMETRIC CHARACTERIZATION OF ITALIAN RC BRIDGES FOR SEISMIC VULNERABILITY ASSESSMENT <i>Claudia Zelaschi, Ricardo Monteiro, Rui Pinho</i></p> <p>8224 PROBABILISTIC SEISMIC DAMAGE CONTROL ANALYSIS OF SUB-STANDARD BRIDGE COLUMNS <i>M. Saiid Saiidi</i></p>	Room 7

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<p>Thursday, June 9 14:30-16:30</p> <p>MS 705: IDENTIFICATION OF MATERIAL MODELS</p> <p><i>MS Organizers:</i> Danuta Szeliga, Wacław Kuś, Tadeusz Burczyński, Jan Kusiak <i>Chair:</i> Tadeusz Burczyński</p> <p>6471 APPLICATION OF TENSOR DECOMPOSITION TO THE CALIBRATION OF NONLINEAR CONSTITUTIVE MATERIAL LAWS <i>Clément Olivier, David Ryckelynck, Julien Cortial, Christian Rey</i></p> <p>9138 THE BOOTSTRAP APPROACH TO THE STATISTICAL SIGNIFICANCE OF PARAMETERS IN RSM MODEL <i>Jacek Pietraszek, Leszek Wojnar</i></p> <p>10907 A BAYESIAN APPROACH FOR PARAMETER IDENTIFICATION IN ELASTOPLASTICITY <i>Hussein Rappel, Lars A.A. Beex, Jack S. Hale, Stephane P.A. Bordas</i></p> <p>11289 CHARACTERIZATION OF STRAIN-RATE EFFECTS IN LASER SHEET FORMING <i>Diego Celentano, Javier Castillo, Marcela Cruchaga</i></p> <p>7243 GEOMETRICAL REPRESENTATION OF RAILWAY BALLAST USING THE DISCRETE ELEMENT METHOD (DEM) <i>Joaquín Irazábal, Fernando Salazar, Eugenio Oñate</i></p> <p>10502 IDENTIFICATION OF MULTISCALE MATERIAL MODELS IMPLEMENTED INTO VIRTROLL SYSTEM FOR HOT STRIP ROLLING <i>Lukasz Rauch, Alexander Nam, Rudolf Kawalla, Jan Kusiak, Maciej Pietrzyk</i></p>	Room 9	<p>Thursday, June 9 14:30-16:30</p> <p>MS 712 - 1: SMART MATERIAL SYSTEMS AND STRUCTURES</p> <p><i>MS Organizers:</i> Mieczysław Kuczma, Pavel Krejčí, Jörg Schröder, Georgios E. Stavroulakis, Gwidon Szefer <i>Chair:</i> Mieczysław Kuczma, Gwidon Szefer</p> <p>11049 KEYNOTE: OPTIMAL CONTROL TUNNING IN SMART STRUCTURES WITH DELAMINATIONS <i>Panos Koutsianitis, Amalia Moutsopoulou, Georgios Drosopoulos, Georgios Tairidis, Georgia Foutsitzis, Georgios Stavroulakis</i></p> <p>11925 MINIMIZATION AND STABILITY OF COUPLED ELECTRO-MECHANICS <i>Daniel Vallicotti, Stephan Teichtmeister, Marc-André Keip, Christian Miehe</i></p> <p>11910 THE POTENTIAL OF VISCOELASTICITY FOR JOINING BAND GAPS IN ACOUSTIC METAMATERIALS <i>Mirosława Lewinska, Hans van Dommelen, Varvara Kouznetsova, Anastasiia Krushynska, Marc Geers</i></p> <p>9201 METAMATERIAL WITH NEGATIVE STRAIN-RATE SENSITIVITY <i>Öztan Akif, Simon Konrad Naderer, Stefan Hiermaier</i></p> <p>10021 NONLINEAR CHARACTERIZATION AND MULTISCALE HOMOGENIZATION OF TWO-PHASE MAGNETO-ELECTRIC COMPOSITES <i>Matthias Labusch, Jörg Schröder</i></p>	Room 11

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<p>Thursday, June 9 14:30-16:30</p> <p>MS 612: NUMERICAL SIMULATIONS FOR SMART-CITY APPLICATIONS <i>MS Organizers:</i> Julien Waeytens, Rachida Chakir <i>Chair:</i> Julien Waeytens, Rachida Chakir</p> <p>8934 COMPARISON OF NUMERICAL TURBULENT FLOWS AND MEASUREMENTS FROM 3D ANEMOMETER IN A CHALET IN VIEW OF INDOOR AIR QUALITY APPLICATIONS <i>Julien Waeytens, Erick Merliot, Rachida Chakir, Damien Joseph, Amita Tripathi</i></p> <p>9249 REDUCED BASIS METHODS FOR CFD PROBLEMS ARISING FROM WATER NETWORK MODELLING <i>Rachida Chakir, Erick Merliot</i></p> <p>11135 COUPLING CFD SOLUTIONS WITH NON BAYESIAN INVERSE MODEL IN URBAN LOCAL SCALE ENVIRONMENTS: OPTIMAL SENSORS NETWORK DEPLOYMENT AND SOURCE APPORTIONMENT FOR AIR QUALITY <i>Claude Souprayen, Damien Joseph, Amita Tripathi</i></p> <p>10335 OPTIMAL CONTROL METHODS FOR ENERGY AND AIR QUALITY MANAGEMENT OF SUBWAY STATIONS <i>Tristan Rigaut, Julien Waeytens, Frédéric Bourquin</i></p> <p>6201 NUMERICAL OPTIMIZATION OF NEAR-ROAD VEGETATION BARRIERS <i>Ludek Benes, Viktor Sip</i></p> <p>8079 NON-INTRUSIVE REDUCED BASIS METHODS APPLIED TO OUTDOOR AIR QUALITY MODELS <i>Janelle Katharine Hammond, Rachida Chakir, Frédéric Bourquin, Yvon Maday</i></p>	Room 12	<p>Thursday, June 9 14:30-16:30</p> <p>MS 811: MULTISCALE MODELING OF CONCRETE AND CONCRETE STRUCTURES <i>MS Organizers:</i> Herbert Mang, Yong Yuan <i>Chair:</i> Bernhard Pichler</p> <p>8152 MULTI-SCALE MODELLING OF ASPHALT CONCRETE <i>Johannes Wimmer, Jaan-Willem Simon, Stefanie Reese</i></p> <p>10396 CREEP HOMOGENIZATION OF CEMENTITIOUS MATERIALS <i>Markus Königsberger, Muhammad Irfan-ul-Hassan, Bernhard Pichler, Christian Hellmich</i></p> <p>11777 NUMERICAL SIMULATION OF THE AUTOGENOUS SHRINKAGE OF HARDENING PORTLAND CEMENT PASTE <i>Peng Gao, Guang Ye, Jiangxiong Wei, Qijun Yu</i></p> <p>9388 MULTI FILED ANALYSIS ON CREEP BEHAVIOR OF CONCRETE IN LOWER HIGHER TEMPERATURE <i>Wei Jiang, Yong Yuan, Zhenghong Yang</i></p>	Room 17
<p>Thursday, June 9 14:30-16:30</p> <p>CS 620 - 2: COMPUTATIONAL CONTACT MECHANICS <i>Chair:</i> Zdenek Dostal</p> <p>11611 KEYNOTE: SCALABLE MASSIVELY PARALLEL ALGORITHMS FOR CONTACT PROBLEMS <i>Zdenek Dostal, Tomas Kozubek, David Horak, Vaclav Hapla, Alex Markopoulos, Tomas Brzobohaty, Lubos Riha, Oldrich Vlach</i></p> <p>9800 COMPARISON OF CONTACT STRESS REPRESENTATIONS USING THE MORTAR METHOD AND DUAL LAGRANGE MULTIPLIERS <i>Christoph Wilking, Manfred Bischoff</i></p> <p>7055 LARGE DEFORMATION CONTACT FORMULATION USING CARTESIAN GRIDS AND CAD DEFINITION OF THE BOUNDARY <i>Jose Manuel Navarro, Manuel Tur, Rubén Sevilla, José Albeda</i></p> <p>7180 A DUAL MORTAR METHOD FOR FINITE DEFORMATION THERMO-MECHANICAL CONTACT – FINITE ELEMENTS AND ISOGEOMETRIC ANALYSIS <i>Alexander Seitz, Wolfgang A. Wall, Alexander Popp</i></p>	Room 15	<p>Thursday, June 9 14:30-16:30</p> <p>MS 607 - 2: ADVANCES IN COMPUTATIONAL METHODS FOR LIQUID-VAPOR FLOWS WITH PHASE TRANSFER PROCESSES <i>MS Organizers:</i> Rémi Abgrall, Pietro M. Congedo, Tore Flåtten, Bernhard Müller, Marica Pelanti, Maria Giovanna Rodio <i>Chair:</i> Marica Pelanti</p> <p>9006 A ROBUST EQUATION OF STATE FOR LIQUID-VAPOR MIXTURE <i>Pietro Marco Congedo, Maria Giovanna Rodio, Rémi Abgrall</i></p> <p>7546 AN ALL MACH NUMBER PRESSURE BASED ALGORITHM FOR MULTIPHASE FLOW SIMULATIONS <i>Ernst A. Meese</i></p> <p>7624 A LOW DIFFUSIVE APPROACH FOR TWO PHASE FLOWS <i>Alberto Beccantini</i></p> <p>8127 LARGE TIME STEP SCHEME FOR THE BAER-NUNZIATO MODEL BY MEANS OF A LAGRANGE-PROJECTION TYPE APPROACH <i>Christophe Chalons, Samuel Kokh</i></p> <p>9047 A MIXTURE-ENERGY-CONSISTENT NUMERICAL METHOD FOR COMPRESSIBLE THREE-PHASE FLOW WITH APPLICATION TO LASER-INDUCED CAVITATION BUBBLE <i>Keh-Ming Shyue</i></p> <p>7036 SPLITTING METHOD AND IMPLICIT-EXPLICIT SCHEMES FOR A COMPRESSIBLE GAS-LIQUID MODEL <i>Charles Demay, Jean-Marc Hérard, Christian Bourdarias, Benoit De Laage De Meux, Stéphane Gerbi</i></p>	Room 18
<p>Thursday, June 9 14:30-16:30</p> <p>MS 905 - 3: DISCONTINUOUS GALERKIN METHODS: NEW TRENDS AND APPLICATIONS <i>MS Organizers:</i> Sonia Fernández-Méndez, Nicoletta Franchina <i>Chair:</i> Sonia Fernández-Méndez, Nicoletta Franchina</p> <p>4875 A DISSIPATIVE FILTER FOR SUB-CELL DISCONTINUITY CAPTURING WITH THE DISCONTINUOUS GALERKIN METHOD <i>Konstantinos Panourgias, John Ekaterinaris</i></p>	Room 20		

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6829 A DISCONTINUOUS GALERKIN SCHEME FOR COMPRESSIBLE MULTI-PHASE FLOW <i>Claus-Dieter Munz, Stefan Fechter, Timon Hitz</i>	Thursday, June 9 14:30-16:30	Room 22
7733 DISCONTINUOUS GALERKIN SPECTRAL ELEMENT METHODS FOR ELASTODYNAMICS PROBLEMS: APPLICATION TO 3D WAVE PROPAGATIONS. <i>Ilario Mazzieri, Alberto Ferroni, Paola Francesca Antonietti, Alfio Quarteroni</i>		
8180 HIGH-ORDER LINEARLY IMPLICIT TWO-STEP PEER METHODS FOR THE DISCONTINUOUS GALERKIN SOLUTION OF THE INCOMPRESSIBLE RANS EQUATIONS <i>Francesco Carlo Massa, Gianmaria Noventa Francesco Bassi, Alessandro Colombo, Antonio Ghidoni, Marco Lorini</i>		
9753 OUTPUT-BASED SPACE-TIME ADAPTATION WITH NON-VARIATIONAL TIME INTEGRATION <i>Krzysztof Fidkowski</i>		
9094 A SPACE-TIME DISCONTINUOUS-GALERKIN APPROACH FOR SEPARATED FLOWS <i>Scott Murman, Laslo Diosady, Anirban Garai, Marco Ceze, Corentin Carton de Wiart</i>		
Thursday, June 9 14:30-16:30	Room 21	Room 22
MS 1215 - 2: NONLINEAR VIBRATIONS OF CONSERVATIVE AND NONCONSERVATIVE SYSTEMS: PHENOMENA AND ADVANCED NUMERICAL METHODS <i>MS Organizers: Malte Krack, Ludovic Renson, Gaëtan Kerschen Chair: Malte Krack</i>		
7157 TOPOLOGY OPTIMIZATION IN NONLINEAR STRUCTURAL DYNAMICS USING DIRECT COMPUTATION OF NONLINEAR COEFFICIENTS <i>Jakob S. Jensen, Suguang Dou</i>		
9344 GEOMETRY EFFECTS ON THE NONLINEAR OSCILLATIONS OF VISCOELASTIC CYLINDRICAL SHELLS <i>Zenon Del Prado, Marco Amabili, Paulo Gonçalves, Frederico Da Silva</i>		
9834 THEORETICAL AND EXPERIMENTAL STUDIES OF LINEAR AND NONLINEAR BEHAVIORS IN ACOUSTIC RESONATORS <i>Valentin Alamo Vargas, Emmanuel Gourdon, Alireza Ture Savadkoohi</i>		
10775 CONTINUATION OF QUASI-PERIODIC SOLUTIONS WITH TWO-FREQUENCY HARMONIC BALANCE METHOD <i>Louis Guillot, Pierre Vigué, Christophe Vergez, Bruno Cochelin</i>		
5883 FREE PERIODIC OSCILLATIONS OF CNTS SUBJECTED TO ELECTROSTATIC FORCES <i>Pedro Ribeiro</i>		
10580 NUMERICAL COMPUTATION OF NONLINEAR NORMAL MODES WITH MODAL DERIVATIVES BASED REDUCED ORDER MODELS <i>Cees Sombroek, Paolo Tiso, Ludovic Renson, Gaetan Kerschen</i>		
Thursday, June 9 14:30-16:30	Room 21	Room 22
MS 1103 - 1: MATHEMATICAL SURROGATE MODELLING IN ELECTROMAGNETICS <i>MS Organizers: Petrie Meyer, Tom Dhaene, Dirk Deschrijver Chair: Petrie Meyer, Tom Dhaene</i>		
5887 CERTIFIED REDUCED BASIS METHODS FOR MICROWAVE MODELS GOVERNED BY TIME-HARMONIC MAXWELL'S EQUATIONS <i>Peter Benner, Martin Hess</i>		
7676 A SHORT-TIME PRONY METHOD FOR THE DETECTION OF TRANSIENTS <i>Annie Cuyt, Wen-shin Lee, Min-Nan Tsai</i>		
9215 NUMERICAL OPTIMIZATION AND CHALLENGES OF SPHERICAL-WAVE BASED MACRO-MODELLING TECHNIQUES <i>Bart Boesman, Georges Gielen, Guy Vandebosch, Davy Pissoort</i>		
11182 DESIGN OF AXIALLY SYMMETRIC POWER COMBINERS USING SURROGATE BASED OPTIMIZATION <i>Ryno Beyers, Dirk de Villiers</i>		
4429 RATIONAL MODELING OF MULTIVARIATE MULTI-FIDELITY DATA <i>Elizabeth Rita Samuel, Dirk Deschrijver, Luc Knockaert, Tom Dhaene, Annie Cuyt</i>		
8552 COMPARISON STUDY OF PC AND KRIGING BASED SURROGATE MODELING <i>Arun Kaintura, Domenico Spina, Ivo Couckuyt, Tom Dhaene</i>		
Thursday, June 9 14:30-16:30	Room 21	Room 22
MS 1009 - 6: ADJOINT METHODS FOR STEADY & UNSTEADY OPTIMIZATION <i>MS Organizers: Kyriacos C. Giannakoglou, Jens Dominik Mueller Chair: Kyriacos C. Giannakoglou</i>		
9051 AERODYNAMIC SHAPE OPTIMIZATION USING THE TRUNCATED NEWTON METHOD AND CONTINUOUS ADJOINT <i>Mehdi Ghavami Nejad, Evangelos M. Papoutsis-Kiachagias, Kyriacos C. Giannakoglou</i>		
9204 SHAPE OPTIMIZATION OF TURBOMACHINERY ROWS USING A PARAMETRIC BLADE MODELLER AND THE CONTINUOUS ADJOINT METHOD RUNNING ON GPUS <i>F. Gagliardi, K.T. Tsakas, X.S. Trompoukis, K.C. Giannakoglou</i>		
9316 GEOMETRIC CONTINUITY CONSTRAINTS FOR ADJACENT NURBS PATCHES IN SHAPE OPTIMISATION <i>Xingchen Zhang, Yang Wang, Mateusz Gugala, Jens-Dominik Mueller</i>		
9992 TOWARDS AN OUTPUT-BASED RE-MESHING METHODOLOGY TO THE TURBOMACHINERY CASE <i>Mateusz Gugala, Marcus Meyer, Jens-Dominik Mueller</i>		
6621 CAD KERNEL AND GRID GENERATION ALGORITHMIC DIFFERENTIATION FOR TURBOMACHINERY ADJOINT OPTIMIZATION <i>Ismael Sanchez Torreguitart, Tom Verstraete, Lasse Mueller</i>		
Thursday, June 9 14:30-16:30	Room 23	Room 23

16:30-17:00
Coffee Break

DAY 4 – THURSDAY, JUNE 9

TECHNICAL SESSIONS

Thursday, June 9 17:00-19:00	Minos East	Minos South
STS 9: ADVANCED WING HIGH-LIFT SYSTEMS <i>MS Organizers: Jochen Wild Chair: Jochen Wild</i>		
14489 AN OVERVIEW OF CFD-BASED OPTIMIZATION ACTIVITIES FOR HIGH-LIFT SYSTEM DESIGN CARRIED OUT WITHIN THE DESIREH PROJECT <i>Pierluigi Iannelli</i>		MS 1204 - 2: NONLINEAR DYNAMICS OF ROTATING STRUCTURES <i>MS Organizers: Evangeline Capiez-Lernout, Marc P. Mignolet, Christian Soize Chair: Evangeline Capiez-Lernout</i>
14513 APPLICATION OF SYNTHETIC JETS ACTUATORS IN WING-PYLON JUNCTION AREA TO IMPROVE THE HIGH LIFT PERFORMANCES <i>Petr Vrchota</i>		4830 A NEW DYNAMIC SUBSTRUCTURING METHOD FOR NONLINEAR AND DISSIPATIVE SYSTEMS <i>Colas Joannin, Benjamin Chouvion, Fabrice Thouverez</i>
15520 DESIGN AND VALIDATION OF ACTIVE FLOW SEPARATION CONTROL AT THE WING/ENGINE JUNCTION <i>Michael Meyer</i>		6780 SOME REMARKS ON TIME INTEGRATION OF 3D ROTOR-STATOR ASSEMBLY <i>Benoit Prabel</i>
14518 NACELLE STRAKE DESIGN FOR A SHORT TAKE-OFF AND LANDING CONFIGURATION WITH TURBOPROPS <i>Dennis Keller, Yasim Hasan, Ralf Rudnik</i>		MS 1209: DYNAMIC ANALYSIS OF BEAMS UNDER MOVING VEHICLES: APPLICATION TO RAILWAY TRACK MODELLING, DESIGN AND REHABILITATION <i>MS Organizers: Fernando Simões, Antonio Pinto da Costa Chair: Antonio Pinto da Costa</i>
14496 A SUMMARY OF 10 YEARS OF EUROPEAN RESEARCH WITH THE DLR-F15 HIGH-LIFT AIRFOIL <i>Jochen Wild</i>		7515 NUMERICAL DYNAMIC ANALYSIS OF BEAMS ON NONLINEAR ELASTIC FOUNDATIONS UNDER HARMONIC MOVING LOAD <i>Diego Froio, Roberto Moioli, Egidio Rizzi</i>
Thursday, June 9 17:00-19:00	Minos North	
MS 614 - 2: YOUNG INVESTIGATORS MINISYMPOSIUM <i>MS Organizers: Jaan-Willem Simon, Alexander Popp, Joan Baiges Chair: Joan Baiges</i>		5568 NUMERICAL ANALYSIS FOR DYNAMIC RESPONSE CHARACTERISTICS OF PRESTRESSED CONCRETE SLEEPER <i>Tsutomu Watanabe, Kodai Matsuoka, Shintaro Minoura</i>
11075 FOURIER-GALERKIN METHODS AS ALTERNATIVE TO FINITE ELEMENT METHOD FOR NUMERICAL HOMOGENIZATION <i>Tom de Geus, Jaroslav Vondřejc</i>		7443 ANALYSIS OF THE EFFECTS OF A MASS-SPRING-SYSTEM IN A TUNNEL USING A COUPLED INTEGRAL TRANSFORM METHOD – FINITE ELEMENT METHOD APPROACH <i>Manuela Hackenberg, Gerhard Müller</i>
12097 CHALLENGES IN MULTISCALE MODELING OF COMPOSITE STRUCTURES <i>Evan Pineda</i>		Thursday, June 9 17:00-19:00
6233 NODAL INTEGRATION: AN ATTEMPT TO REDUCE SPURIOUS PRESSURE OSCILLATIONS IN THE SIMULATION OF INCOMPRESSIBLE FLOWS USING THE PFEM <i>Marco Lucio Cerquaglia, Geoffrey Deliége, Romain Boman, Jean-Philippe Ponthot</i>		Danae
9825 CAN THE SHEAR RESPONSE OF TEXTILE COMPOSITES BE REALISTICALLY DESCRIBED WHEN THE TOWS ARE MODELLED AS HOMOGENIZED MATERIAL? <i>Jaan-Willem Simon, Bertram Stier, Stefanie Reese</i>		MS 108 - 2: NUMERICAL METHODS FOR COUPLED PROBLEMS IN BIOMEDICAL APPLICATIONS <i>MS Organizers: Martina Bukac, Annalisa Quaini Chair: Martina Bukac</i>
6742 COMPLEXITIES OF THE IMPLEMENTATION OF WORK STEALING SCHEDULING STRATEGY FOR EXTENSIVE PARALLEL SCIENTIFIC APPLICATIONS ON STATE-OF-THE-ART HIGH-PERFORMANCE SYSTEMS <i>Elizaveta Dorofeeva, Gevorg Poghosyan</i>		8086 KEYNOTE: A NUMERICAL STUDY OF THE DYNAMIC BEHAVIOR OF AN ENCAPSULATED MICROBUBBLE IN A WALL-RESTRICTED FLOW <i>Maria Vlachomitrou, Nikos Pelekasis</i>
		9202 POROELASTIC MODEL OF A CELL DURING CHIMNEYING MIGRATION THROUGH A MICRO-CHANNEL <i>Solenne Deveraux, Rachele Allena, Denis Aubry</i>
		11671 UNIFIED THEORY OF ONE-DIMENSIONAL STRUCTURES AND FLOWS WITH APPLICATIONS TO BIOMEDICAL ENGINEERING AND COUPLED PROBLEMS <i>Alfonso Pagani, Daniele Guarnera, Erasmo Carrera</i>
		11728 NUMERICAL MODELING OF DIFFUSION IN POLY(LACTIC-CO-GLYCOLIC ACID) CONSISTED OF DRUG-LOADED EMULSION ELECTROSPUN NANOFIBERS <i>Milan Milosevic, Milos Kojic, Vladimir Simic, Dusica Stojanovic, Petar Uskokovic</i>

<p>Thursday, June 9 17:00-19:00</p> <p>CS 630 - 4: SIMULATION OF FLUID-STRUCTURE INTERACTION <i>Chair:</i> Haifa Sallem</p> <p>12003 NUMERICAL SIMULATION OF RESIDUAL DISTORTIONS INDUCED BY WELDING PROCESS <i>Haifa Sallem, Syrine Ben Yahia, Jean Michel Bergheau</i></p> <p>5437 NUMERICAL SIMULATION OF BUOYANT PLUMES USING A FIXED POINT ITERATIVE METHOD <i>Blanca Bermúdez, Alejandro Rangel-Huerta, W. Fermín Guerrero S., José David Alanis Urquiza</i></p> <p>5988 ALGORITHMS BASED ON TIME-DISCONTINUOUS GALERKIN SPACE-TIME FINITE ELEMENTS AND OPERATOR-SPLITTING METHODS FOR GENERALIZED THERMOELASTICITY AT FINITE STRAINS <i>Mebratu Wakeni, Daya Reddy, Andrew McBride</i></p> <p>6475 NUMERICAL STUDY OF TWO OPTIMIZED COUPLING INTERFACE TREATMENTS FOR STEADY CONJUGATE HEAT TRANSFER PROBLEMS <i>Marc Paul Errera, Roch Roukouz El Khoury</i></p> <p>8697 MECHANICAL PROPERTY AND MODELING OF SILICONE FOAM UNDER COMPLEX ENVIRONMENTS INCLUDING GAMMA RADIATION <i>Guangyong Liu</i></p>	<p>Europa</p>	<p>Thursday, June 9 17:00-19:00</p> <p>MS 606 - 1: COMPUTATIONAL MODELING OF HYDRAULIC FRACTURING <i>MS Organizers:</i> Gianluca Cusatis, Gilles Pijaudier-Cabot, Günther Meschke <i>Chair:</i> Günther Meschke</p> <p>11918 KEYNOTE: MINIMIZATION PRINCIPLES IN MULTI-PHYSICS OF SOLIDS AT FRACTURE <i>Christian Miehe, Stephan Teichtmeister, Steffen Mauthe</i></p> <p>9315 PARAMETRIC STUDY ON HYDRAULIC FRACTURING IN ANISOTROPIC MEDIA <i>Valliappan Valliappan, Joris Remmers, Auke Barnhoorn, David Smeulders</i></p> <p>7950 SENSITIVITY ANALYSIS OF HYDRAULIC FRACTURING USING AN EXTENDED FINITE ELEMENT METHOD FOR THE PKN MODEL <i>Hasini Garikapati, Clemens V. Verhoosel, Harald van Brummelen, Pedro Diez</i></p> <p>6100 THE XFEM FOR A SIMPLIFIED MODEL IN HYDRAULIC FRACTURING <i>Markus Schäfer, Thomas-Peter Fries</i></p> <p>9113 2D MODELLING OF HYDRAULIC FRACTURING IN JOINTED ROCKS WITH A LATTICE APPROACH <i>David Grégoire, Vincent Lefort, Olivier Nouailletas, Gilles Pijaudier-Cabot</i></p>	<p>Athena</p>
<p>Thursday, June 9 17:00-19:00</p> <p>MS 202 - 1: CIVIL ENGINEERING MATERIALS AND STRUCTURES UNDER EXTREME LOADINGS <i>MS Organizers:</i> Fabrice Gatuingt, Frédéric Dufour, Panagiotis Kotronis <i>Chair:</i> Fabrice Gatuingt</p> <p>8339 EQUIVALENT SDOF MODEL FOR ESTIMATING BLAST-INDUCED DYNAMIC REACTIONS OF EQUILATERAL TRIANGULAR HARDENED WALL ELEMENTS <i>Sebastian Mendes, Liling Cao, Douglas Heinze, Elisabeth Malsch</i></p> <p>11112 NUMERICAL STUDY OF THE INFLUENCE OF THE AGGREGATES SPATIAL ARRANGEMENT ON CONCRETE DYNAMIC BEHAVIOUR <i>Silvère Pierre, Fabrice Gatuingt</i></p> <p>9862 MODELING AND SIMULATION FOR AN OPTIMIZED DESIGN OF A DYNAMIC BEND TEST. <i>Rana Akiki, Fabrice Gatuingt, Cédric Giry, Nicolas Schmitt, Lavinia Stéfan</i></p> <p>7300 SIMULATION OF DYNAMIC BEHAVIOR OF QUASI-BRITTLE MATERIALS WITH NEW RATE DEPENDENT DAMAGE MODEL <i>Luis Pereira, J. Weerheim, L.J. Sluys</i></p> <p>16727 DERIVATION OF FRAGILITY CURVES FOR RC FRAMES RETROFITTED WITH RC INFILL WALLS BASED ON FULL-SCALE PSEUDODYNAMIC TESTING RESULTS <i>Christis Chrysostomou, Nicholas Kyriakides, Panagiotis Kotronis, Elpida Georgiou</i></p>	<p>Leda</p>	<p>Thursday, June 9 17:00-19:00</p> <p>MS 403 - 4: PARTICLE-BASED METHODS IN FLUID MECHANICS <i>MS Organizers:</i> Sergio Idelsohn, Eugenio Oñate <i>Chair:</i> Carlos Felippa, Josep Maria Carbonell</p> <p>4586 A PARTICLE FINITE ELEMENT METHOD FOR MACHINING SIMULATIONS <i>Juan Manuel Rodríguez Prieto, Pär Jonsén, Ales Svoboda</i></p> <p>7321 MODELING OF NON-SPHERICAL, ELONGATED PARTICLES FOR INDUSTRIAL SUSPENSION FLOW SIMULATION <i>Jakob Dominik Redlinger-Pohn, Lisa Maria König, Christoph Kloss, Christoph Goniva, Stefan Radl</i></p> <p>8484 AN IMPLICIT MATERIAL POINT METHOD: FORMULATION AND VALIDATION <i>Ilaria Iaconeta, Antonia Larese, Riccardo Rossi, Eugenio Oñate</i></p> <p>9327 SOME INVESTIGATIONS OF A GENERALIZED PARTICLE METHOD FOR CONVECTION-DIFFUSION EQUATIONS <i>Daisuke Tagami, Yusuke Imoto</i></p> <p>10103 THREE-DIMENSIONAL REMESHED SMOOTHED PARTICLE HYDRODYNAMICS FOR THE SIMULATION OF ISOTROPIC TURBULENCE <i>Anas Obeidat</i></p> <p>7211 RECOVERY OF DIFFERENTIATION/INTEGRATION COMPATIBILITY OF MESHLESS OPERATORS VIA LOCAL ADAPTATION OF THE POINT CLOUD IN THE CONTEXT OF NODAL INTEGRATION <i>Gabriel Fougeron, Guillaume Pierrot</i></p>	<p>Artemis</p>

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Thursday, June 9	Aphrodite
17:00-19:00	

MS 102 - 2: COMPUTATIONAL MODELS IN BIOMECHANICS AND MECHANOBIOLOGY

MS Organizers: Estefania Peña, Renato Natal Jorge, Miguel A. Martínez, Pedro S. Martins

Chair: Pedro S. Martins

- 10661** HYBRID CELL CENTRED/VERTEX MODEL FOR LARGE TISSUE DEFORMATIONS
José J. Muñoz, Payman Mosaffa, Yanlan Mao, Rob Tetley, Nina Asadipour, Antonio Rodríguez-Ferran

- 10702** SENSITIVITY OF TEMPERATURE FIELD IN THE SYSTEM PROTECTIVE CLOTHING - FOREARM WITH RESPECT TO PERTURBATIONS OF EXTERNAL HEATING CONDITIONS
Bohdan Mochnacki, Mariusz Ciecielski

- 10067** IMAGE-BASED CHARACTERIZATION OF LUNG REGIONAL STRAIN: A FINITE-ELEMENT APPROACH TO BIOMECHANICAL IMAGE ANALYSIS
Daniel Hurtado, Nicolás Villarroel, Jaime Retamal, Guillermo Buggedo, Alejandro Bruhn

- 11792** ANALYSIS OF THE BIOMECHANICAL BEHAVIOR OF ARTERIES FROM INTRA-UTERINE GROWTH RESTRICTED FETUSES
Daniel Cañas-Quezada, Emilio Herrera, Claudio García-Herrera, Bernardo Krause, Diego Celentano

- 7851** A COMPUTATIONAL APPROACH TO RED BLOOD CELL ELECTRO-DEFORMATION
Nicola Antonio Nodargi, Paolo Bisegna, Federica Caselli

- 9651** THE INFLUENCE OF MECHANICAL STIMULUS ON NUTRIENT TRANSPORT AND CELL GROWTH IN ENGINEERED CARTILAGE: A FINITE ELEMENT APPROACH
Sara Cortez, A. Completo, J.L. Alves

- 11147** CONSTITUTIVE MODELLING OF HYPERELASTIC MATERIALS USING A HYBRID OPTIMIZATION TECHNIQUE
Pedro Martins, Renato Natal Jorge, Carla Roque

Thursday, June 9	Antigoni
17:00-19:00	

MS 201 - 3: MICROSTRUCTURE-DRIVEN DEFORMATION AND FAILURE IN CRYSTALLINE MATERIALS

MS Organizers: Pilar Ariza, Lucia Nicola, Angelo Simone

Chair: Angelo Simone

- 7090** TWO-SCALE MODELS OF DYNAMICAL PLASTICITY AND FRACTURE OF ALUMINUM
Vasiliy Krasnikov, Alexander Mayer, Dmitriy Voronin

- 7861** NON-LOCALIZED DEFORMATION IN METALLIC GLASSES WITH PRE-EXISTING SHEAR BANDS
Shaoxing Qu

- 8037** ANALYSIS OF SPALL RESPONSE IN ALUMINUM WITH HELIUM BUBBLES UNDER DYNAMIC LOADING
Fengguo Zhang

- 8601** EJECTA SIZE DISTRIBUTION FOR SHOCK LOADED CU WITH A WEDGED SURFACE GROOVE
An-Min He, Pei Wang, Jian-Li Shao

- 7783** THREE-DIMENSIONAL CONTINUUM DISLOCATION DYNAMICS SIMULATION OF DISLOCATION STRUCTURES IN DEFORMATION OF MICRO-BEAMS
Alireza Ebrahimi, Thomas Hochrainer

- 9325** DECIPHERING THE MORPHOLOGY OF FRACTURE SURFACES: HOW COMPUTATIONAL MECHANICS CAN HELP
Laurent Ponson, Ankit Srivastava, Elisabeth Bouchaud, Erik Van der Giessen, Viggo Tvergaard, Alan Needleman, Angelo Simone

Thursday, June 9	Apollo East
17:00-19:00	

MS 711- 3: FOURIER-BASED METHODS FOR COMPUTING THE BEHAVIOR OF HETEROGENEOUS MATERIALS DEVELOPMENTS, EXTENSIONS AND APPLICATIONS

MS Organizers: Lionel Gélébart, Hervé Moulinec, Franz Roters, François Willot

Chair: Hervé Moulinec, Franz Roters, François Willot

- 8684** A COMPARISON BETWEEN DIFFERENT METHODS FOR THE NUMERICAL SIMULATION OF POLYCRYSTALLINE AGGREGATES
Camille Robert, Charles Mareau

- 7287** ARE FFT-BASED METHODS REALLY THAT DIFFERENT FROM FEM-BASED METHODS?
Dennis Merkert, Matthias Kabel, Matti Schneider, Andreas Fink

- 7330** CONSTITUTIVE RELATION ERROR FOR FFT-BASED METHODS
Sébastien Brisard, Ludovic Chamoin

- 8912** A SPECTRAL METHOD TO SOLVE MULTI-PHYSICS COUPLED ELASTO-VISCOPLASTIC BOUNDARY VALUE PROBLEMS
Pratheek Shanthraj, Shaokang Zhang, Franz Roters

- 9005** MODELING INTERFACE DECOHESION IN A SPECTRAL FRAMEWORK
Luv Sharma, Pratheek Shanthraj, Franz Roters, Ron H.J. Peerlings, Marc G.D. Geers

Thursday, June 9	Apollo West
17:00-19:00	

MS 204 - 3: IMPACT AND CRASH MECHANICS

MS Organizers: Manfred Bischoff, Fabian Duddeck

Chair: Manfred Bischoff, Fabian Duddeck

- 7266** COMMONALITY OPTIMIZATION FOR COMPONENTS IN VEHICLE FAMILIES WITH RESPECT TO CRASHWORTHINESS DESIGN
Lailong Song, Fabian Duddeck, Johannes Fender

- 7268** HOW TO ACCOUNT FOR THE RELAXATION EFFECT OF HIGH DIMENSIONAL CONSTRAINTS IN THE DIRECT SOLUTION SPACE METHOD
Volker Lange, Johannes Fender, Fabian Duddeck

- 8205** FINITE ELEMENT SIMULATION OF CRACK PROPAGATION AND DELAMINATION IN LAYERED SHELLS DUE TO BLADE CUTTING
Federica Confalonieri, Aldo Ghisi, Umberto Perego

- 7256** DIRECT METHODS TO DERIVE SOLUTION SPACES FOR VEHICLE CRASH DESIGN
Johannes Fender, Fabian Duddeck

Thursday, June 9	Room 1
17:00-19:00	

MS 1401 - 3: TOICA: THERMAL OVERALL INTEGRATED CONCEPT AIRCRAFT

MS Organizers: Pierre Arbez, Jean-Claude Dunyach

Chair: Jean-Claude Dunyach, Pierre Arbez

- 16674** APPLICATION AND VALIDATION OF TOICA CAPABILITIES ON AERONAUTICAL USE CASES
Yves Baudier

- 6724** AIRBUS PLATEAU AND THE GLOBAL THERMAL AIRCRAFT USE CASE
Alexandre Massol, Olivier Broca, Sébastien Rouvreau, Julien Giron

- 16676** DASSAULT AVIATION PLATEAU AND BUSINESS JET AIR SYSTEM USE CASE
E. Thomas

- 11136** AIRBUS HELICOPTERS PLATEAU AND THERMAL MANAGEMENT OF AN AVIONIC BAY USE CASE
Bertrand Truffart, Ludovic Allaire, Stéphane Georges, Didier Lefeuve

- 16678** THERMAL MODELLING AND INTEGRATION METHODS: EQUIPMENT MODEL SPECIFICATION, EXCHANGE PROCESS, INTEGRATION (FMU)
M. Fouquembergh

Thursday, June 9 Room 2
17:00-19:00

MS 413 - 2: COMPUTATIONAL METHODS IN ENVIRONMENTAL FLUID MECHANICS

MS Kazuo Kashiya, Etahn Kubatko, Joannes Westerink
Organizers:
Chair: Kazuo Kashiya

- 9151** A MULTIDIMENSIONAL DISCONTINUOUS GALERKIN MODELING FRAMEWORK FOR COUPLED RAINFALL-RUNOFF/RIVERINE FLOW
Ethan Kubatko, Dustin West, Mariah Yaufman

- 5450** A 2D-3D ONE-WAY COUPLING MODEL BETWEEN PRESSURE POISSON BOUSSINESQ-TYPE METHOD AND PARTICLE METHODS
Naoto Mitsume, Aaron S. Donahue, Joannes J. Westerink, Shinobu Yoshimura

- 7912** A 2D-3D TSUNAMI HYBRID MODEL USING OVERLAPPING METHOD BASED ON THE STABILIZED FEM
Guoming Ling, Junichi Matsumoto, Kazuo Kashiya

- 11071** FINITE ELEMENT PARALLEL COMPUTING FOR A COUPLING METHOD OF 2D SHALLOW WATER FLOW AND 3D GAS-LIQUID TWO-PHASE FLOW
Junichi Matsumoto, Guoming Ling, Hiroki Hanazawa, Kazuo Kashiya

Thursday, June 9 Room 3
17:00-19:00

MS 603 - 2: COMPUTATIONAL METHODS IN FLUID-STRUCTURE INTERACTION WITH IMPACT ON INDUSTRIAL APPLICATIONS

MS Organizers: Elisabeth Longatte, Yannick Hoarau, Marianna Braza
Chair: Elisabeth Longatte, Yannick Hoarau, Marianna Braza

- 11189** AN ELECTRO-MECHANICAL COUPLED MODEL FOR FLUID STRUCTURES INTERACTION SIMULATIONS OF PIEZOELECTRIC ACTUATORS
Vinh-Tan Nguyen, Jason Leong, Pankaj Kumar

- 12287** INVESTIGATING THE POTENTIAL FOR FLOW CONTROL VIA AN ARRAY OF FLEXIBLE FLAPS USING LATTICE BOLTZMANN METHOD
Alistair Revell

- 7206** A MESH MORPHING BASED FSI METHOD USED IN AERONAUTICAL OPTIMIZATION APPLICATIONS
Matej Andrejašić, David Eržen, Emiliano Costa, Stefano Porziani, Marco Evangelos Biancolini, Corrado Groth

- 7333** AN ADAPTIVE, RESIDUAL BASED SPLITTING APPROACH FOR THE TIME DEPENDENT PENALIZED NAVIER STOKES EQUATIONS
Léo Nouveau, Héloise Beaugendre, Mario Ricchiuto, Cécile Dobrzynski, Rémi Abgrall

Thursday, June 9 Room 4
17:00-19:00

CS 320: GRID GENERATION AND ADAPTIVE TECHNIQUES

Chair: Esther Andrés-Pérez

- 5574** A LAPLACIAN MESH DEFORMATION TECHNIQUE FOR SIMULATION-DRIVEN DESIGN OPTIMIZATION
Mario J. Martin-Burgos, Daniel González-Juárez, Esther Andrés-Pérez

- 6783** ADJOINT BASED AND SPURIOUS DRAG BASED MESH REFINEMENT FOR COMPRESSIBLE FLOW SIMULATION
Jacques Peter, Antoine Dumont

- 8256** AN INTEGRATED FRAMEWORK FOR WRAPPING AND MESH GENERATION OF COMPLEX GEOMETRIES
David Martineau, Jeremy Gould, Jacques Papper

- 4889** A STABLE AND CONSERVATIVE TIME-DEPENDENT INTERFACE FORMULATION ON SUMMATION-BY-PARTS FORM: AN INITIAL INVESTIGATION
Samira Nikkar, Jan Nordström

- 8917** 2-D GRID ADAPTATION FOR COMPRESSIBLE FLOWS USING A COMBINATION OF PRESSURE AND PSEUDO-ENTROPY GRADIENTS
Vijay Ram R, Shashank Subramanian, Santanu Ghosh

Thursday, June 9 Room 5
17:00-19:00

MS 912 - 2: HIGH-ORDER METHODS, SENSITIVITY ANALYSIS AND ADAPTATION FOR THE NAVIER STOKES EQUATIONS

MS Organizers: Vincent Couaillier, Rémi Abgrall, Eusebio Valero
Chair: Eusebio Valero

- 8628** LARGE EDDY SIMULATION OF TURBULENCE WITH LOCAL ADAPTATIVE DISCONTINUOUS GALERKIN METHOD
Göktürk Kuru, Marta de la Llave Plata, Vincent Couaillier, Rémi Abgrall, Frédéric Coquel

- 8545** IMPLEMENTATION OF A LOW-MACH NUMBER MODIFICATION FOR HIGH-ORDER FINITE-VOLUME SCHEMES FOR ARBITRARY HYBRID UNSTRUCTURED MESHES
Nicholas Simmonds, Panagiotis Tsoutsanis, Adrian Gaylard

- 8544** ADAPTIVE MESH REFINEMENT TECHNIQUES FOR HIGH-ORDER FINITE-VOLUME WENO SCHEME
Srinivasan Harshavardhana, Panagiotis Tsoutsanis

- 6681** AN EFFICIENT AVATAR OF THE HIGH-ORDER RBC SCHEMES FOR UNSTEADY COMPRESSIBLE FLOWS
Alain Lerat

- 6299** IMPLICIT LARGE EDDY SIMULATIONS USING AN INCOMPRESSIBLE HIGH ORDER DISCONTINUOUS GALERKIN METHOD WITH SLIDING MESHES
Esteban Ferrer

DAY 4 – THURSDAY, JUNE 9

<p>Thursday, June 9 17:00-19:00</p> <p>MS 1225 - 2: SEISMIC PERFORMANCE ASSESSMENT OF STRUCTURES AND SEISMIC RISK MITIGATION STRATEGIES</p> <p><i>MS Organizers:</i> Marco Vona <i>Chair:</i> Marco Vona</p> <hr/> <p>10806 SEISMIC VULNERABILITY OF URBAN AREAS: A CASE-STUDY <i>Giorgio Lacanna, Pauline Deguy, Maurizio Ripepe, Massimo Coli, Barbara Paoletti, Marco Tanganelli, Stefania Viti, Mario De Stefano</i></p> <p>11553 SPO2FRAG V1.0: SOFTWARE FOR PUSHOVER-BASED DERIVATION OF SEISMIC FRAGILITY CURVES <i>Iunio Iervolino, Georgios Baltzopoulos, Dimitrios Vamvatsikos, Roberto Baraschino</i></p> <p>12116 REASSESS V1.0: A COMPUTATIONALLY-EFFICIENT SOFTWARE FOR PROBABILISTIC SEISMIC HAZARD ANALYSIS <i>Iunio Iervolino, Eugenio Chioccarelli, Pasquale Cito</i></p> <p>16427 SIMPLIFIED PERIOD ESTIMATION OF ITALIAN RC BRIDGES FOR LARGE-SCALE SEISMIC ASSESSMENT <i>C. Zelaschi, R. Monteiro, R. Pinho</i></p> <hr/> <p>MS 1213: INNOVATIVE STRUCTURAL SYSTEMS FOR SEISMIC RESISTANT BUILDINGS</p> <p><i>MS Organizers:</i> Carlo Castiglioni <i>Chair:</i> Francesco Morelli, Nikolaos Bakas</p> <hr/> <p>9178 NONLINEAR ANALYSIS AND EXPERIMENTAL BEHAVIOUR OF AN INNOVATIVE STEEL FRAME WITH REINFORCED CONCRETE INFILL WALLS <i>Andrea Dall'Asta, Graziano Leoni, Francesco Morelli, Walter Salvatore, Alessandro Zona</i></p> <p>10790 MODAL PROPERTIES AND SEISMIC RESPONSE OF EXISTING BUILDING RETROFITTED BY EXTERNAL BRACINGS WITH VISCOUS DAMPERS <i>Laura Gioiella, Enrico Tubaldi, Fabrizio Gara, Andrea Dall'Asta</i></p>	<p>Room 7</p> <p>4618 STOCHASTIC MODELING OF HYPERELASTIC MATERIALS WITH UNCERTAINTIES <i>Brian Staber, Johann Guilleminot</i></p>	
<p>Thursday, June 9 17:00-19:20</p> <p>MS 605: FRICTIONAL CONTACTS WITH LUBRICATION – BASICS AND APPLICATIONS</p> <p><i>MS Organizers:</i> Michael Müller, Thomas Hagemann <i>Chair:</i> Michael Müller, Thomas Hagemann</p> <hr/> <p>6627 STUDIES TOWARDS PARTIALLY FILLED GAPS IN ELASTO-HYDRODYNAMIC SYSTEMS <i>Michael Mueller, Georg-Peter Ostermeyer</i></p> <p>7559 SIMULATION OF DRAG AND CHURNING LOSSES ON TAPERED ROLLER BEARINGS <i>Xiaojiang Si, Hubert Schwarze, Jürgen Liebrecht, Bernd Sauer</i></p> <p>10341 APPLICATION OF MODEL ORDER REDUCTION TECHNIQUES TO THE IMPACT OF AN ELASTIC BODY ON A LUBRICATED PLATE <i>Jan Henrik Schmidt, Sergey Solov'yev, Wolfgang Seemann</i></p> <p>11349 THE INFLUENCE OF MANUFACTURING TOLERANCES ON THE PERFORMANCE OF FLUID FILM THRUST BEARINGS <i>Michał Wasilczuk, Christos Papadopoulos, Loukas Zoupas, Vassilis Zouzoulas, Michał Wodtke</i></p> <p>7767 A THEORETICAL AND EXPERIMENTAL STUDY ON MODIFIED SURFACE-MICROSTRUCTURES IN A HIGHLY LOADED CAM-TAPPET CONTACT SYSTEM <i>Jan-Dirk Gerken, Gunther Brenner, Hubert Schwarze</i></p> <p>9225 LIMITING SHEAR STRESS FORMULATION FOR TEHL SIMULATION <i>Thomas Lohner, Klaus Michaelis, Johann-Paul Stempflinger, Karsten Stahl</i></p> <p>7855 MODELING OF TRANSIENT FRICTION IN RUNNING-IN PROCESS UNDER MIXED LUBRICATION CONDITIONS <i>Yazhao Zhang, Yonggang Meng</i></p>	<p>Room 9</p>	
<p>Thursday, June 9 17:00-19:00</p> <p>MS 1304 - 1: STOCHASTIC MODELING AND IDENTIFICATION OF UNCERTAINTIES IN COMPUTATIONAL MECHANICS</p> <p><i>MS Organizers:</i> Johann Guilleminot, Maarten Arnst, Christian Soize <i>Chair:</i> Christian Soize</p> <hr/> <p>8833 KEYNOTE: SENSITIVITY ANALYSIS OF PARAMETRIC UNCERTAINTIES AND MODELING ERRORS IN GENERALIZED PROBABILISTIC MODELING <i>Maarten Arnst</i></p> <p>8373 BAYESIAN IDENTIFICATION OF IRREVERSIBLE MATERIAL MODELS <i>Bojana Rosic, Muhammad Sadiq Sarfaraz, Hermann G. Matthies</i></p> <p>12207 A MULTISCALE FRAMEWORK FOR THE STOCHASTIC ASSIMILATION AND MODELING OF UNCERTAINTY ASSOCIATED NCF COMPOSITE MATERIALS <i>Louajine Mehrez, Roger Ghanem, Colin McAuliffe, William R. Rodgers, Venkat Aitharaju</i></p> <p>11073 STOCHASTIC COARSE-GRAINING OF AMORPHOUS SOLIDS – FROM MOLECULAR DYNAMICS TO CONTINUUM MECHANICS <i>Michael Shields, Adam Hinkle, Dihui Ruan, Michael Falk, Chris Rycroft</i></p>	<p>Room 8</p> <p>7</p> <p>MS 715 - 2: COMPUTATIONAL ANALYSIS OF COMPOSITE STRUCTURES</p> <p><i>MS Organizers:</i> Efstatios E. Theotokoglou <i>Chair:</i> Efstatios E. Theotokoglou</p> <hr/> <p>7001 KEYNOTE: A NUMERICAL STUDY FOR THE BUCKLING CAPACITY OF WIND TURBINE BLADES: GEOMETRY, LOADING AND MATERIAL INFLUENCE <i>Efstatios E. Theotokoglou, George A. Balokas, Evgenia K. Savvaki</i></p> <p>5840 MODELING OF FIBER-REINFORCED PLASTICS TAKING INTO ACCOUNT THE MANUFACTURING PROCESS <i>Cherry Ann Reclusado, Sumito Nagasawa</i></p> <p>11074 FEA OF FOAM CORE SANDWICH FOOTBRIDGE BASED IN 6-PARAMETER SHELL THEORY <i>Bartosz Sobczyk</i></p> <p>7677 RANKING SCIENTISTS <i>J. F. F. Mendes, S. N. Dorogovtsev</i></p>	<p>Room 10</p>

DAY 4 – THURSDAY, JUNE 9

<p>Thursday, June 9 17:00-19:00</p> <p>MS 712 - 2: SMART MATERIAL SYSTEMS AND STRUCTURES <i>MS Organizers:</i> Mieczysław Kuczma, Pavel Krejčí, Jörg Schröder, Georgios E. Stavroulakis, Gwidon Szefer <i>Chair:</i> Jörg Schröder, Georgios E. Stavroulakis</p> <p>10899 A THERMODYNAMICALLY CONSISTENT FINITE STRAIN MICRO-SPHERE FRAMEWORK FOR PHASE-TRANSFORMATION <i>Richard Ostwald, Thorsten Bartel, Andreas Menzel</i></p> <p>9869 SIMULATION OF LOW-CYCLE FATIGUE IN FERROELECTRIC MESOSTRUCTURE <i>Sergii Kozinov, Meinhard Kuna</i></p> <p>6510 ACCURATE SIMULATION OF ACOUSTO-MAGNETO-MECHANICAL SYSTEMS USING HP FINITE ELEMENTS WITH APPLICATION TO MRI COIL DESIGN <i>Scott Bagwell, P.D. Ledger, A.J. Gil</i></p> <p>9157 MULTISCALE COMPUTATIONAL CHARACTERIZATION OF SOFT SOLIDS WITH MAGNETO-ELECTRO-MECHANICAL COUPLING <i>Marc-Andre Keip, Matthias Rambausek, Christian Miehe</i></p> <p>11133 COMPOSITE STRUCTURAL ELEMENTS WITH EMBEDDED SHAPE MEMORY ALLOYS <i>Mieczysław Kuczma, Bożena Kuczma</i></p>	Room 11	<p>Thursday, June 9 17:00-19:00</p> <p>MS 1004: AERODYNAMIC STRATEGIES FOR THE GLOBAL OPTIMIZATION OF FLYING CONFIGURATIONS IN SUPERSONIC FLOW <i>MS Organizers:</i> Adriana Nastase, Catalin Nae <i>Chair:</i> Adriana Nastase, Catalin Nae</p> <p>9477 GLOBAL OPTIMIZATION OF THE SHAPE OF AN AEROSPACE VEHICLE, VIA ITERATIVE OPTIMUM-OPTIMORUM STRATEGY <i>Adriana Nastase</i></p> <p>6858 CRITICAL EVALUATION FOR DESIGN DECISION FOR A TAILLESS SUPERSONIC AIRCRAFT CONFIGURATION <i>Catalin Nae</i></p> <p>9081 DEVELOPMENT OF PHYSICAL METHODS OF THE SUPERSONIC AIRPLANE NEAR-FIELD INVESTIGATION AIMED AT THE SONIC BOOM MINIMIZATION <i>Sergey Chernyshev, Alexander Ivanov, Andrey Kiselev, Vladimir Mosharov, Leonid Teperin</i></p> <p>6847 LOW BOOM / LOW DRAG SMALL SIZE SUPERSONIC AIRCRAFT DESIGN <i>Atsushi Ueno, Yasushi Watanabe, Itham Salah El Din, Richard Grenon, Gerald Carrier</i></p>	Room 15
<p>Thursday, June 9 17:00-19:20</p> <p>MS 611: ADVANCES IN IMMERSSED METHODS IN FSI PROBLEMS <i>MS Organizers:</i> Elie Hachem, Ramon Codina <i>Chair:</i> Elie Hachem</p> <p>10268 ENERGY CONSERVATION ANALYSIS OF A FAMILY OF EMBEDDED BOUNDARY METHODS FOR MULTI-MATERIAL FLOW AND FLUID-STRUCTURE INTERACTION PROBLEMS <i>Zhengyu Huang, Charbel Farhat</i></p> <p>9970 A POROUS FLOW BASED MODEL FOR ROUGH SURFACE CONTACT IN FLUID-STRUCTURE INTERACTION <i>Christoph Ager, Anh-Tu Vuong, Benedikt Schott, Alexander Popp, Wolfgang A. Wall</i></p> <p>7587 A HIGH-PERFORMANCE IMMERSED METHODOLOGY FOR PARTICULATE FLOW PROBLEMS <i>Hugo Casquero, Carles Bona-Casas, Hector Gomez</i></p> <p>10768 A MIXED STRAIN/DISPLACEMENT FINITE ELEMENT FORMULATION FOR COUPLED CFD/CSD BLAST AND IMPACT PROBLEMS <i>Orlando Soto, Joseph Baum, Rainald Lohner</i></p> <p>10970 HIGH FIDELITY ADAPTIVE MESHING FOR IMMERSSED METHODS <i>Thomas Toulorge, Youssef Mesri, Elie Hachem</i></p> <p>9260 DIRECT FEM UNIFIED CONTINUUM MODELING OF MULTIPHASE TURBULENT FLUID-STRUCTURE INTERACTION WITH A FIXED MESH <i>Johan Jansson, Johan Hoffman, Margarida Moragues Ginard</i></p> <p>9307 IMMERSED METHODS FOR COMPRESSION MOULDING OF AUTOMOTIVE STRUCTURAL PIECES <i>Patrice Laure, Luis-Fernando Salazar Betancourt, Luisa Silva, Thierry Coupez</i></p>	Room 12	<p>Thursday, June 9 17:00-19:00</p> <p>MS 1221: COMPUTATIONAL STRUCTURAL STABILITY <i>MS Organizers:</i> Herbert A. Mang, Yeon-Bin Yang <i>Chair:</i> Herbert A. Mang</p> <p>10115 KEYNOTE: ON THE CORRELATION OF THE PERCENTAGE BENDING ENERGY AND THE NONLINEARITY OF PREBUCKLING PATHS <i>Stefan Pavlicek, Xin Jia, Herbert A. Mang</i></p> <p>8485 COMPUTATIONAL ANALYSIS OF THE COLLAPSE BEHAVIOUR OF THIN-WALLED POLYGONAL STEEL BEAMS <i>Raffaele Ardito</i></p> <p>7511 MIXED SOLID MODELS IN NUMERICAL ANALYSIS OF SLENDER STRUCTURES. <i>Domenico Magisano, Leonardo Leonetti, Giovanni Garcea</i></p> <p>10548 ULTIMATE STRENGTH ANALYSIS OF STIFFENED PANELS OF SHIP STRUCTURES UNDER COMBINED LOAD <i>Li Hong, Meng Linghua, Qin Zhongwen, Zhang Enguo, Li Li</i></p> <p>9538 INFLUENCE OF STRAIN DEFINITIONS ON TRUSSES CRITICAL LOADS <i>Reyolando Brasil, Jose Balthazar</i></p>	Room 17

DAY 4 – THURSDAY, JUNE 9

Thursday, June 9	Room 18
17:00-19:00	

MS 809: MULTISCALE STOCHASTIC FINITE ELEMENT METHODS

MS Organizers: George Stefanou, Xi Frank Xu, Yu Ching Wu

Chair: George Stefanou, Yu Ching Wu

- 10001** KEYNOTE: DETERMINATION OF MESOSCALE RANDOM FIELDS FOR THE APPARENT PROPERTIES OF SPATIALLY RANDOM COMPOSITES
Dimitrios Savvas, George Stefanou

- 9348** THE STOCHASTIC FINITE ELEMENT METHOD FOR NUCLEAR APPLICATIONS

José David Arregui Mena, Lee Margetts, Llion Evans, D. V. Griffiths, Anton Shterenlikht, Luis Cebamanos, Paul M. Mummary

- 7467** MULTI-SCALE STOCHASTIC STUDY OF THE GRAIN ORIENTATION AND ROUGHNESS EFFECTS ON POLYCRYSTALLINE THIN STRUCTURES

V. Lucas, L. Wu, Jean-C Golival, S. Paquay, R. Voicu, A. Baracu, L. Noels

- 6907** MULTISCALE DATA-DRIVEN STOCHASTIC FINITE ELEMENT MODELING OF CHLORIDE DIFFUSIVITY IN RECYCLED AGGREGATE CONCRETE

Yu Ching Wu

- 9385** STOCHASTIC MULTISCALE DOMAIN DECOMPOSITION FOR STOKES-DARCY FLOWS

Ivan Yotov, Ilona Ambartsumyan, Eldar Khattatov, ChangQing Wang

Thursday, June 9	Room 20
17:00-19:00	

MS 905 - 4: DISCONTINUOUS GALERKIN METHODS: NEW TRENDS AND APPLICATIONS

MS Organizers: Sonia Fernández-Méndez, Nicoletta Franchina

Chair: Sonia Fernández-Méndez, Nicoletta Franchina

- 4658** EXTENDED HYBRIDIZABLE DISCONTINUOUS GALERKIN (X-HDG) FOR VOID PROBLEMS
Ceren Gürkan, Sonia Fernández-Méndez, Esther Sala-Lardies, Martin Kronbichler

- 7289** A STUDY OF MULTIGRID SMOOTHERS USED IN COMPRESSIBLE CFD BASED ON THE CONVECTION DIFFUSION EQUATION
Philippe Birken, Jonathan Bull, Antony Jameson

- 6971** DISCONTINUOUS GALERKIN SOLUTION OF THE REYNOLDS-AVERAGED NAVIER-STOKES AND KL-KT-LOG(W) TRANSITION MODEL EQUATIONS
Antonio Ghidoni, Marco Lorini, Gianmaria Noventa, Francesco Bassi, Alessandro Colombo

- 6227** UNFITTED DISCONTINUOUS GALERKIN METHODS APPLIED TO A PHASE FIELD SIMULATION OF FLUID FILLED FRACTURES
Christian Engwer, Liesel Schumacher

- 6779** ENTROPY STABLE DISCONTINUOUS GALERKIN SCHEME FOR SYSTEMS OF CONVECTION-DIFFUSION
Mohammad Zakerzadeh, Georg May

- 9400** CONSERVATION PROPERTIES OF HIGH-ORDER FLUX-RECONSTRUCTION SCHEMES IN SPLIT FORMS
Issei Morinaka, Yoshiaki Abe, Takanori Haga, Taku Nonomura, Koji Miyaji

Thursday, June 9	Room 21
17:00-19:00	

MS 910 - 1: HIGH ORDER CFD METHODS: CONCLUSIONS AND OUTLOOK

MS Organizers: Koen Hillewaert, John Ekaterinaris, Peter Vincent, Norbert Kroll, Norbert Huynh, Z.J. Wang

Chair: Norbert Kroll

- 8170** DEVELOPMENT OF A DISCONTINUOUS GALERKIN METHOD SOLVER FOR SCALE-RESOLVING SIMULATIONS
Koen Hillewaert, Jean-Sébastien Cagnone, Ariane Frère, Michel Rasquin, Zafer Zeren

- 10180** HIGH-FIDELITY SIMULATION OF UNSTEADY FLOW PROBLEMS USING A 3RD ORDER HYBRID MUSCL/CD SCHEME
Alastair West, Doru Caraeni

- 8755** A DISCONTINUOUS GALERKIN SPECTRAL ELEMENT FRAMEWORK FOR THE SIMULATION OF TURBULENT FLOWS
Andrea Beck, Thomas Boellmann, David Flad, Hannes Frank, Nico Krais, Claus-Dieter Munz

- 9171** NON-INTRUSIVE STEADY STATE INVISCID, LAMINAR, AND RANS VERIFICATION CASES FOR CFD CODES
Marshall Galbraith, Carl Ollivier-Gooch

Thursday, June 9	Room 22
17:00-19:00	

MS 1103 - 2: MATHEMATICAL SURROGATE MODELLING IN ELECTROMAGNETICS

MS Organizers: Petrie Meyer, Tom Dhaene, Dirk Deschrijver

Chair: Petrie Meyer, Tom Dhaene

- 6044** ON THE USE OF S-PARAMETER TRANSFORMATIONS TO IMPROVE SURROGATE MODEL BEHAVIOUR OF MULTIPORT NETWORKS
Petrie Meyer

- 11613** ON THE ELECTROMAGNETIC DESIGN OF A HORN AND ORTHOGONAL MODE TRANSDUCER FOR THE SKA BAND 2 FEED WITH HIGH-FIDELITY PERFORMANCE
Robert Lehmensiek

- 6166** RECENT ADVANCES IN SURROGATE MODELLING OF REFLECTOR ANTENNA SYSTEMS
Dirk De Villiers

- 8058** ACCELERATION OF MESH-BASED PHYSICAL OPTICS FOR ELECTROMAGNETIC SCATTERING ANALYSIS
Dao P. Xiang, Matthys M. Botha

- 8246** KRIGING SURROGATE MODELS FOR ZERO-POLE OPTIMIZATION OF MICROWAVE FILTERS
Natalia Leszczyńska, Selvakumar Ulaganathan, Adam Lamecki, Tom Dhaene, Michał Mrozowski

- 7849** SURROGATE MODELING OF ANTENNA RADIATION CHARACTERISTICS BY GAUSSIAN PROCESSES
Jan Jacobs, Dirk de Villiers

Thursday, June 9 17:00-19:00	Room 23
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**MS 1009 - 7: ADJOINT METHODS FOR STEADY & UNSTEADY
OPTIMIZATION**

MS Organizers: Kyriakos C. Giannakoglou, Jens Dominik Mueller
Chair: Jens Dominik Mueller

- 6478** CAD BASED PARAMETERIZATION AND CONSTRAINTS FOR
ADJOINT OPTIMIZATION

Marios Damigos, Eugene de Villiers, Paolo Geremia

- 6744** ALTERNATIVE SOLUTION ALGORITHMS FOR PRIMAL AND
ADJOINT INCOMPRESSIBLE NAVIER-STOKES

Mattia Oriani, Guillaume Pierrot

- 6763** FINITE TRANSFORMATION RIGID MOTION MESH MORPHER

George Eleftheriou, Athanasios Liatsikouras, Gabriel Fougeron,

Guillaume Pierrot

- 9809** TOWARDS MULTIDISCIPLINARY ADJOINT OPTIMIZATION OF
TURBOMACHINERY COMPONENTS

Marc Schwalbach, Tom Verstraete

- 6192** LINKING PARAMETRIC CAD WITH ADJOINT SURFACE
SENSITIVITIES

*Ilias Vasilopoulos, Dheeraj Agarwal, Marcus Meyer, Trevor T.
Robinson, Cecil G. Armstrong*

DAY 5 – FRIDAY, JUNE 10

TECHNICAL SESSIONS

<p>Friday, June 10 9:00-11:00</p> <p>MS 403 - 5: PARTICLE-BASED METHODS IN FLUID MECHANICS <i>MS Organizers:</i> Sergio Idelsohn, Eugenio Oñate <i>Chair:</i> Pablo Agustín Becker, Chengfeng Li</p> <p>10397 STUDY OF COMPRESSIBLE FILTER CAKE FORMATION USING DEM-CFD SIMULATION <i>Ruturaj Deshpande, Sergiy Antonyuk, Iliev Oleg</i></p> <p>10787 COUPLED CFD/DEM MULTIPHASE SIMULATION OF A BOTTOM-SPRAY WURSTER COATER USING A HYBRID CPU/GPU APPROACH <i>Eva Siegmann, Matej Zadravec, Charles Radeke, Johannes Khinast</i></p> <p>11618 INVESTIGATING SOLID-FLUID TRANSITION IN GRANULAR MATERIALS BY MEANS OF NUMERICAL SIMULATIONS <i>Dalila Vescovi, Stefan Lüding</i></p> <p>5232 SHOCK WAVES CALCULATED USING MATERIAL POINT METHODS <i>Duan Zhang, Tilak Dhakal</i></p> <p>6460 ADVANCES IN MODELLING INDUSTRIAL FORMING PROCESSES USING THE PARTICLE FINITE ELEMENT METHOD (PFEM) <i>Josep Maria Carbonell, Eugenio Oñate, Javier Oliver</i></p> <p>7646 A PROPOSAL OF A GRANULAR FLOW CONSTITUTIVE MODEL FOR MODELING THE SOLID/GRANULAR MATERIAL INTERACTION <i>César Dávalos, Juan Carlos Cante, Abraham Leonel López</i></p>	<p>Zeus East</p>	<p>Friday, June 10 9:00-11:00</p> <p>MS 922 - 1: HIGH-ORDER METHODS FOR ELASTIC WAVES AND THEIR APPLICATION <i>MS Organizers:</i> Thomas Hagstrom, Daniel Appelo <i>Chair:</i> Daniel Appelo</p> <p>5484 KEYNOTE: OPTIMAL RADIATION BOUNDARY CONDITIONS AND ABSORBING LAYERS FOR ELASTIC WAVES <i>Thomas Hagstrom, John Lagrone, Daniel Appelo</i></p> <p>5429 THE DOUBLE ABSORBING BOUNDARY (DAB) METHOD FOR HETEROGENEOUS AND ANISOTROPIC ELASTIC MEDIA <i>Dan Givoli, Thomas Hagstrom, Jacobo Bielak, Daniel Rabinovich</i></p> <p>6643 ACCELERATING DISCONTINUOUS GALERKIN METHODS FOR ELASTIC WAVE PROPAGATION <i>Timothy Warburton, Jesse Chan, Axel Modave, Arturo Vargas, Zheng Wang</i></p> <p>5110 GALERKIN DIFFERENCE METHODS FOR WAVE PROPAGATION <i>Jeffrey W. Banks, T. Hagstrom, J. Jacangelo</i></p> <p>11578 ENERGY STABLE HIGH ORDER FINITE DIFFERENCE METHODS ON STAGGERED GRIDS: AN INITIAL INVESTIGATION <i>Ossian O'Reilly, Tomas Lundquist, Jan Nordström</i></p>	<p>Minos North</p>
<p>Friday, June 10 9:00-11:00</p> <p>MS 602 - 4: INNOVATIVE METHODS FOR FLUID-STRUCTURE-INTERACTION <i>MS Organizers:</i> E. Harald van Brummelen, Roger Ohayon, Trond Kvamsdal <i>Chair:</i> E. Harald van Brummelen</p> <p>10911 ON PARTITIONED SOLUTION SCHEMES <i>Wulf Dettmer, Chennakesava Kadapa, Djordje Peric</i></p> <p>11277 IMMersed VARIATIONAL MULTISCALE FINITE ELEMENT METHOD FOR HIGH REYNOLDS NUMBER FLOWS <i>Fehmi Cirak, Qiaoling Zhang</i></p> <p>11974 THE NONLINEAR BEHAVIOR OF A COUPLED PISTON–FLUID SYSTEM SUBJECTED TO VIBRATIONAL ACCELERATION <i>Jonathan Clausen, John Torczynski, Tim O'Hern</i></p> <p>7479 IMPLICIT BOUNDARIES WITH MESH ADAPTATION FOR LIQUID-SOLID-GAS INTERACTIONS AND APPLICATION TO INDUSTRIAL JET WIPE SIMULATION <i>Zineb Hassani, Luisa Silva, Simon Santoso, Marc Anderhuber, Pascal Gardin, Thierry Coupez</i></p> <p>7495 CONVERGENCE ANALYSIS OF COUPLING ITERATIONS FOR THE UNSTEADY TRANSMISSION PROBLEM WITH MIXED DISCRETIZATIONS <i>Azahar Monge, Philipp Birken</i></p>	<p>Minos East</p>	<p>Friday, June 10 9:00-11:00</p> <p>CS 630 - 5: SIMULATION OF FLUID-STRUCTURE INTERACTION <i>Chair:</i> Nikolai Kornev</p> <p>10854 CFD SIMULATION OF THERMO- AERODYNAMIC INTERACTION IN A SYSTEM HUMANCLOTH-ENVIRONMENT UNDER VERY LOW TEMPERATURE AND WIND CONDITIONS <i>Irina Cherunova, Sina Samarbaksch, Nikolai Kornev</i></p> <p>6891 ASSESSING THE EFFECT OF THE TEMPORAL DYNAMICS OF A DBD ACTUATOR ON THE INDUCED IONIC WIND PROFILE: RECONCILING EXPERIMENTAL AND NUMERICAL RESULTS. <i>Guillaume Dufour, Francois Rogier</i></p> <p>10607 COUPLING ATOMISTIC MODELS WITH CONTINUOUS FINITE BEAM ELEMENTS <i>Florian Niederhäuser, Jens Wackerfuß</i></p> <p>8094 A 3D FINITE ELEMENT COUPLING MODEL TO STUDY THE EFFECT OF MECHANICALLY-INDUCED CRACKS ON THE SERVICE LIFE PREDICTION OF RC STRUCTURE <i>Mohammed Naji Hammoud, Nathan Benkemoun, Ouali Amiri</i></p>	<p>Europa</p>
<p>MS 411: NON-NEWTONIAN HEAT AND FLUID FLOW SUBJECT TO MAGNETIC FORCES <i>MS Organizers:</i> Laszlo Konozsy, Dimitris Drikakis <i>Chair:</i> Laszlo Konozsy</p> <p>9372 VALIDATION OF A MAGNETO- AND FERRO-HYDRODYNAMIC MODEL FOR NON-ISOTHERMAL FLOWS IN CONJUNCTION WITH NEWTONIAN AND NON-NEWTONIAN FLUIDS <i>László Kónözy, Pietro Scienza, Dimitris Drikakis</i></p> <p>9717 NUMERICAL STUDY OF MAGNETIC PARTICLES CONCENTRATION IN BIOFLUID (BLOOD) UNDER THE INFLUENCE OF HIGH GRADIENT MAGNETIC FIELD IN MICROCHANNEL <i>Vassilios Loukopoulos, George Bourantas, Dimitrios Labropoulos, Vassilios-Martin Nikiforidis, Stéphane Bordas, George Nikiforidis</i></p>	<p>Minos East</p>	<p>MS 411: NON-NEWTONIAN HEAT AND FLUID FLOW SUBJECT TO MAGNETIC FORCES <i>MS Organizers:</i> Laszlo Konozsy, Dimitris Drikakis <i>Chair:</i> Laszlo Konozsy</p> <p>9372 VALIDATION OF A MAGNETO- AND FERRO-HYDRODYNAMIC MODEL FOR NON-ISOTHERMAL FLOWS IN CONJUNCTION WITH NEWTONIAN AND NON-NEWTONIAN FLUIDS <i>László Kónözy, Pietro Scienza, Dimitris Drikakis</i></p> <p>9717 NUMERICAL STUDY OF MAGNETIC PARTICLES CONCENTRATION IN BIOFLUID (BLOOD) UNDER THE INFLUENCE OF HIGH GRADIENT MAGNETIC FIELD IN MICROCHANNEL <i>Vassilios Loukopoulos, George Bourantas, Dimitrios Labropoulos, Vassilios-Martin Nikiforidis, Stéphane Bordas, George Nikiforidis</i></p>	<p>Europa</p>

DAY 5 – FRIDAY, JUNE 10

<p>Friday, June 10 9:00-11:00</p> <p>MS 202 - 2: CIVIL ENGINEERING MATERIALS AND STRUCTURES UNDER EXTREME LOADINGS</p> <p><i>MS Organizers:</i> Fabrice Gatuingt, Frédéric Dufour, Panagiotis Kotronis <i>Chair:</i> Panagiotis Kotronis</p> <p>7381 A NEW METHOD FOR FATIGUE LIFE PREDICTION BASED ON THE THICK LEVEL SET APPROACH <i>L.O. Voormeeren, F.P. van der Meer, J. Maljaars, L.J. Sluys</i></p> <p>8463 MODELLING STRATEGIES OF PRESTRESSING TENDONS AND REINFORCEMENT BARS IN CONCRETE STRUCTURES <i>Antoine Llau, Ludovic Jason, Frédéric Dufour, Julien Baroth</i></p> <p>6550 NUMERICAL EFFICIENCY OF NON-DIFFERENTIABLE CONSTITUTIVE LAW: APPLICATION TO MAZARS UNILATERAL DAMAGE MODEL. <i>Johanes Chandra, Frédéric Dufour, Stéphane Grange</i></p> <p>7074 A MESH-INDEPENDENT DAMAGE-PLASTICITY MODEL FOR THE CHARACTERIZATION OF CERAMICS IN BALLISTIC PROTECTION <i>Erik Cornelis Simons, Jaap Weerheim, Lambertus Johannes Sluys</i></p> <p>9863 EVALUATION OF THE LEAKAGE RATE THROUGH A THICK CONCRETE WALL UNDER HIGH PRESSURE AND SEVERE HYGROTHERMAL CONDITIONS. <i>Marina Bottone, Sylvie Michel-Ponnelle</i></p>	<p>Leda</p>	<p>Friday, June 10 9:00-11:00</p> <p>MS 805 - 1: ADVANCED MULTI-PHYSICS AND MULTI-SCALE TECHNIQUES FOR MODELING INELASTIC PROCESSES IN SOLIDS: DAMAGE, FRACTURE AND CONTACT MECHANICS</p> <p><i>MS Organizers:</i> Mauro Corrado, Marco Paggi, José Reinoso <i>Chair:</i> Marco Paggi</p> <p>11982 NON-PERIODIC REPRESENTATION OF MICROSTRUCTURES BY MEANS OF WANG TILES: LEVEL-SET BASED DESIGN <i>Martin Doškář, Jan Novák, Jan Zeman, Bernard Sonon, Thierry Jacques Massart</i></p> <p>7320 PHASEFIELD MODELING OF FRACTURE PROCESSES <i>Friedemann Streich, Christian Hesch</i></p> <p>7326 MIXED VARIATIONAL PRINCIPLE FOR MULTI-FIELD PROBLEMS <i>Maik Dittmann, Christian Hesch</i></p> <p>9187 A VERSATILE MULTISCALE FRAMEWORK FOR THE MECHANICAL SIMULATION OF NONWOVENS <i>Alvaro Ridruejo, Francisca Martínez-Hergueta, Carlos González, Javier LLorca</i></p> <p>9036 MESO-SCALE MODELING OF HYBRID INDUSTRIAL/RECYCLED STEEL FIBER-REINFORCED CONCRETE <i>Antonio Caggiano, Diego Said Schicchi, Guillermo Etse, Enzo Martinelli</i></p> <p>10520 AN INTERFACE MODEL COMPATIBLE WITH THE PHASE FIELD APPROACH FOR BRITTLE FRACTURE <i>J. Reinoso, M. Paggi</i></p>	<p>Aphrodite</p>
<p>Friday, June 10 9:00-11:00</p> <p>MS 606 - 2: COMPUTATIONAL MODELING OF HYDRAULIC FRACTURING</p> <p><i>MS Organizers:</i> Gianluca Cusatis, Gilles Pijaudier-Cabot, Günther Meschke <i>Chair:</i> David Grégoire</p> <p>7126 HYDRAULIC FRACTURING SIMULATIONS WITH UNIVERSAL MESHES <i>Mostafa Mollaali, Yongxing Shen</i></p> <p>7507 AN X-FEM BASED MODEL FOR HYDRAULIC FRACTURING <i>Ernst Remij, Joris Remmers, Jacques Huyghe, David Smeulders</i></p> <p>8721 AN ADAPTIVE PHASE-FIELD METHOD FOR NUMERICAL ANALYSIS OF HYDRAULIC STIMULATION IN INTACT AND FRACTURED ROCKS <i>Ildar Khisamitov, Seyed Mohseni, Günther Meschke</i></p> <p>8724 COMPUTATIONAL HOMOGENIZATION AND ORDER REDUCTION IN FRACTURED POROELASTIC MEDIA <i>Ralf Jänicke, Fredrik Larsson, Kenneth Runesson, Holger Steeb</i></p> <p>9002 IMPACT OF THE PROPAGATION ALGORITHM ON THE CONVERGENCE RATE OF HYDRAULIC FRACTURING SIMULATOR TO REFERENCE SOLUTIONS <i>Brice Lecampion, Fatima-Ezzarha Moukhtari</i></p> <p>9089 A FINITE CELL APPROACH TO MODELING PRESSURE-INDUCED PHASE FIELD FRACTURES <i>Nitish Singh, Clemens van Verhoosel, Harald van Brummelen</i></p>	<p>Athena</p>	<p>Friday, June 10 9:00-11:00</p> <p>MS 201 - 4: MICROSTRUCTURE-DRIVEN DEFORMATION AND FAILURE IN CRYSTALLINE MATERIALS</p> <p><i>MS Organizers:</i> Pilar Ariza, Lucia Nicola, Angelo Simone <i>Chair:</i> Lucia Nicola</p> <p>5739 KEYNOTE: LARGE-SCALE ELECTRONIC STRUCTURE CALCULATIONS AND STUDIES ON DISLOCATIONS IN ALUMINUM <i>Sambit Das, Mrinal Iyer, Vikram Gavini</i></p> <p>11415 A STABILIZATION TECHNIQUE FOR COUPLED CONVECTION-DIFFUSION-REACTION EQUATIONS <i>Hector Hernandez, Thierry Massart, Ron Peerlings, Marc Geers</i></p> <p>11742 PREDICTIVE MODELING OF PLASTICITY AND INTERFACIAL DAMAGE IN SUBSTRUCTURED STEELS: APPLICATION TO MARTENSITIC MICROSTRUCTURES <i>Francesco Maresca, Varvara Kouznetsova, Marc Geers</i></p> <p>5761 SIZE EFFECTS AND STOCHASTIC PLASTIC FLOW DURING UNIAXIAL CRYSTAL COMPRESSION: A MINIMAL DISCRETE DISLOCATION MODEL <i>Stefanos Papanikolaou</i></p> <p>7022 MODELING OF FRACTURE IN POLY CRYSTALLINE MATERIALS WITH THE XFEM <i>Steffen Beese, Stefan Loehnert, Peter Wriggers</i></p>	<p>Antigoni</p>
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DAY 5 – FRIDAY, JUNE 10

<p>Friday, June 10 9:00-11:00</p> <p>MS 713 - 1: MICROSTRUCTURE-BASED MODELLING OF HETEROGENEOUS MATERIALS</p> <p><i>MS Organizers:</i> Jan Zeman, Jan Novak, Guillermo Díaz <i>Chair:</i> Guillermo Díaz</p> <hr/> <p>6004 DEPENDENCE OF THE MECHANICAL PROPERTIES OF PENTAMODE MATERIALS ON THE LATTICE MICROSTRUCTURE <i>Ada Amendola, Francesco Fabbrocino, Luciano Feo, Ferdinando Auricchio, Fernando Fraternali</i></p> <p>11137 QUASICONTINUUM METHOD COMBINED WITH ANISOTROPIC MICROPLANE MODEL <i>Karel Mikeš, Milan Jirásek</i></p> <p>7683 STREAMABLE GENERALIZED VORONOI TESSELLATION MODEL FOR TOMOGRAPHIC IMAGES <i>Christophe Leblanc, Van Dung Nguyen, Ludovic Noels, Eric Béchet</i></p> <p>10791 ELECTROSTRICTIVE MATERIALS: MODELLING AND SIMULATION <i>Marco Cisternino, Angelo Iollo, Lisl Weynans, Annie Colin, Philippe Poulin</i></p> <p>10715 STRATEGIES FOR THE OPTIMIZATION OF COMPUTATIONALLY GENERATED MICROSTRUCTURES IN NANOCRYSTALLINE Ni50Ti <i>Manuel Petersmann, Thomas Antretter, Georges Cailletaud, Thomas Waitz</i></p> <p>11623 HIERARCHICAL FABRICATION OF ORIENTED MATERIALS BASED ON WANG TILES <i>Václav Nežerka, Michael Somr, Tomáš Janda, Jan Zeman, Jan Novák</i></p>	<p>Apollo East</p>	<p>Room 1</p>
<p>Friday, June 10 9:00-11:00</p> <p>MS 707 - 1: MICROMECHANICAL MODELLING: COMPETITION BETWEEN ANALYTICAL AND NUMERICAL METHODS</p> <p><i>MS Organizers:</i> Siegfried Schmauder, Vera Petrova <i>Chair:</i> Siegfried Schmauder</p> <hr/> <p>10631 DEFECT ACCUMULATION IN NANOPOROUS WEAR-RESISTANT COATINGS UNDER COLLECTIVE RECRYSTALLIZATION. SIMULATION BY HYBRID CELLULAR AUTOMATON METHOD <i>Dmitry Moiseenko, Pavel Maksimov, Sergey Panin, Viktor Panin</i></p> <p>11376 HYDROGEN ASSISTED CRACKING: ANALYTICAL AND NUMERICAL STUDY <i>Alla Balueva</i></p> <p>9203 INFLUENCE OF MICRO CRACKS ON EFFECTIVE MATERIAL PROPERTIES IN FIBER REINFORCED SMART COMPOSITE MATERIALS <i>Michael Wünsche, Jan Sladek, Vladimir Sladek</i></p> <p>10692 PHASE-FIELD MODELING OF CRACK PROPAGATION IN MULTI-PHASE SYSTEMS <i>Daniel Schneider, Ephraim Schoof, Yunfei Huang, Michael Selzer, Britta Nestler</i></p> <p>5590 MULTISCALE MODELING OF THERMO-ELASTIC PROPERTIES OF MICROCRACKED MATERIAL <i>Antonino Favata, Patrizia Trovalusci, Renato Masiani</i></p>		
<p>Friday, June 10 9:00-11:20</p> <p>MS 1304 - 2: STOCHASTIC MODELING AND IDENTIFICATION OF UNCERTAINTIES IN COMPUTATIONAL MECHANICS</p> <p><i>MS Organizers:</i> Johann Guilleminot, Maarten Arnst, Christian Soize <i>Chair:</i> Maarten Arnst</p> <hr/> <p>8024 TO ESTIMATE NON-STATIONARY STOCHASTIC DISTRIBUTED LOAD ON A BEAM STRUCTURE FROM RESPONSE SAMPLES <i>S.Q. Wu, J. Zhu</i></p> <p>7152 NONPARAMETRIC POSTERIOR SURROGATES BASED ON SPECTRAL LIKELIHOOD EXPANSIONS AND LEAST ANGLE REGRESSION <i>Joseph Nagel, Bruno Sudret</i></p> <p>10618 A LOW-RANK METHOD FOR DIFFUSION EQUATIONS IN RANDOM QUASI-PERIODIC HETEROGENEOUS MEDIA <i>Quentin Ayoul-Guilmand, Anthony Nouy, Christophe Binetruy, Sébastien Comas</i></p> <p>6736 MULTILEVEL STOCHASTIC REDUCED-ORDER MODEL IN LINEAR STRUCTURAL DYNAMICS FOR COMPLEX STRUCTURES <i>Olivier Ezvan, Anas Batou, Christian Soize</i></p> <p>10222 ANALYSIS OF STOCHASTIC DYNAMIC SOIL-STRUCTURE INTERACTION PROBLEMS BY MEANS OF COUPLED FINITE ELEMENTS-PERFECTLY MATCHED LAYERS <i>Manthos Papadopoulos, Stijn François, Geert Degrande, Geert Lombaert</i></p> <p>8487 A ROBUST POLYNOMIAL CHAOS KALMAN FILTER FRAMEWORK FOR CORROSION DETECTION IN REINFORCED CONCRETE STRUCTURES <i>Wael Slika, George Saad</i></p> <p>10875 A NEW HOMOGENISATION SCHEME WITH CERTIFIED ACCURACY FOR RANDOM MEDIA <i>Pierre Kerfriden, Daniel Alves Paladim</i></p>	<p>Room 2</p>	
<p>Friday, June 10 9:00-11:00</p> <p>MS 205: PROBABILISTIC APPROACH TO NUMERICAL SIMULATION OF FRACTURE</p> <p><i>MS Organizers:</i> Alexander V. Gerasimov <i>Chair:</i> Sergey A. Zelepugin</p> <hr/> <p>5235 NUMERICAL SIMULATION OF HIGH-VELOCITY INTERACTION A GROUP OF ELEMENTS WITH THIN-WALLED STRUCTURES <i>Alexander Gerasimov, Sergey V. Pashkov</i></p> <p>8052 NUMERICAL SIMULATION OF MULTILAYER COMPOSITES FAILURE UNDER DYNAMIC LOADING <i>Sergey A. Zelepugin, Aleksey S. Zelepugin, Vladimir F. Tolkachev</i></p> <p>11079 SIMULATION OF MECHANICAL PROPERTIES OF CERAMIC PARTS PRODUCED BY ADDITIVE TECHNOLOGIES IN WIDE RANGE OF LOADING RATES <i>Vladimir A. Skripnyak, Evgeniya Skripnyak, Vladimir V. Skripnyak, Irina K. Vaganova</i></p> <p>11099 FRACTURE OF THIN METAL SHEETS WITH DISTRIBUTION OF GRAIN SIZES IN THE LAYERS <i>Natalia V. Skripnyak, Vladimir V. Skripnyak, Vladimir A. Skripnyak</i></p> <p>11114 BRITTLE OR QUASI-BRITTLE FRACTURE OF CERAMIC NANOCOMPOSITES UNDER DYNAMIC LOADING <i>Evgeniya G. Skripnyak, Vladimir V. Skripnyak, Vladimir A. Skripnyak, Natalia V. Skripnyak, Irina K. Vaganova</i></p> <p>7987 RELIABILITY OF SYSTEMS EQUIPPED WITH VISCOUS DAMPERS WITH VARIABLE PROPERTIES <i>Andrea Dall'Asta, Laura Ragni, Fabrizio Scorzese, Enrico Tubaldi</i></p>	<p>Apollo West</p>	

DAY 5 – FRIDAY, JUNE 10

<p>Friday, June 10</p> <p>9:00-11:00</p> <p>MS 506: ACCURACY AND EFFICIENCY OF APPROXIMATE COMPUTATIONS IN SCIENCE AND ENGINEERING</p> <p><i>MS Organizers:</i> Aram Soroushian <i>Chair:</i> Aram Soroushian</p> <p>11392 KEYNOTE: ON THE EFFECT OF VISCOS DAMPING ON THE STABILITY OF TIME INTEGRATION METHODS <i>Aram Soroushian</i></p> <p>11470 ON THE PERFORMANCE OF A COMPUTATIONAL COST REDUCTION TECHNIQUE APPLIED TO COOLING TOWERS <i>Aram Soroushian, Amin Jahani Mehrnoosh, Yalda Zarabi Manesh, Mohammad Hadi Ghondaghsaz, Ali Bayani, Ali Zaki Zadeh</i></p> <p>4902 DIRECT TIME-DOMAIN INTEGRATION APPROACH FOR VISCOELASTIC SYSTEMS INVOLVING VARIOUS DAMPING MODELS <i>Zhe Ding, Li Li, Yujin Hu</i></p> <p>10689 PROPOSING AN APPROXIMATE METHOD FOR ESTIMATING THE DEFORMATION CAPACITY OF RC SECTIONS UNDER BIDIRECTIONAL LOADING BASED ON NUMERICAL COMPUTATIONS <i>Nahid Attarchian, Afshin Kalantari, Abdoreza Sarvghad Mogoddam</i></p> <p>12101 A DIFFERENT LOOK AT THE RICHARDSON EXTRAPOLATION LEADING TO A NEW PROPOSITION <i>Aram Soroushian</i></p> <p>12109 ON THE FREQUENCY CONTENT OF ERRORS ORIGINATED IN A TIME INTEGRATION COMPUTATIONAL COST REDUCTION TECHNIQUE <i>Aram Soroushian, Mahmood Hosseini, Seyed Mohammad Khalkhali</i></p>	Room 3	<p>6012 TRANSFER MATRIX METHOD OF LINEAR MULTIBODY SYSTEMS FOR FREE VIBRATION ANALYSIS OF BEAM CARRYING ELASTICALLY MOUNTED POINT MASSES <i>Laith K. Abbas, Dong Yang Chen, Xiaoting Rui</i></p>
<p>Friday, June 10</p> <p>9:00-11:00</p> <p>MS 1010: INVERSE PROBLEMS, DESIGN AND OPTIMIZATION</p> <p><i>MS Organizers:</i> Marcelo J. Colaço, Helcio R. B. Orlande, George S. Dulikravich <i>Chair:</i> Marcelo J. Colaço</p> <p>6669 PREDICTION OF GASOLINES PERFORMANCE IN INTERNAL COMBUSTION ENGINES USING RBF- AND KRIGING-BASED METAMODELS <i>Rogerio Carvalho, Guilherme Machado, Marcelo Colaço</i></p> <p>8187 APPLICATION OF THE GENERALIZED MINIMAL RESIDUAL METHOD FOR TARGET MAGNETIC FIELD DISTRIBUTION PROCEDURES <i>Ben Minnaert, Nobby Stevens</i></p> <p>6442 HIGH PERFORMANCE INDUSTRIAL FAN OPTIMIZATION <i>Jacobus van Rooyen, Arnaud Malan, Eddie Raad</i></p> <p>6719 OPTIMAL DECOMPOSITION OF HIGH DIMENSIONAL SOLUTION SPACES FOR ROBUST DESIGN. <i>Stefan Erschen, Fabian Duddeck, Markus Zimmermann</i></p> <p>5915 EFFICIENT CALIBRATION OF DISCRETE ELEMENT MATERIAL MODEL PARAMETERS USING LATIN HYPERCUBE SAMPLING AND KRIGING <i>Michael Rackl, Carolin D. Görnig, Kevin J. Hanley, Willibald A. Günther</i></p> <p>6497 UPDATING PRIOR PARAMETERS BASED ON LIKELIHOOD FUNCTION-BAYESIAN METHOD FOR PARAMETER ESTIMATION AT HIGH MEASUREMENT UNCERTAINTY <i>Somasundharam Sankaran, K Srinivas Reddy</i></p>	Room 5	
<p>Friday, June 10</p> <p>9:00-11:00</p> <p>MS 1216: STRUCTURAL ANALYSIS AND VIBRATIONS</p> <p><i>MS Organizers:</i> Diana V. Bambill, Carlos A. Rossit <i>Chair:</i> Marios Filippoupolitis</p> <p>10293 ASYMPTOTIC ANALYSIS OF DEFORMATIONS OF THE SLIGHTLY ORTHOTROPIC SPHERICAL LAYER UNDER NORMAL PRESSURE <i>Andrei L. Smirnov, Svetlana M. Bauer, Liudmila A. Venatovskaya, Eva B. Voronkova</i></p> <p>7718 DYNAMIC STIFFNESS EQUIVALENT MODELING METHOD OF GIANT OPTO-MECHANICAL STRUCTURE <i>Hu Jie</i></p> <p>11638 EXPERIMENTAL VALIDATION OF FINITE ELEMENT MODELS FOR REINFORCED CONCRETE BEAMS WITH AND WITHOUT DISCONTINUITIES <i>Marios Filippoupolitis, Carl Hopkins, Siu-Kui Au</i></p>	Room 4	
<p>CS 1202 - 1: STRUCTURAL ANALYSIS AND MULTI BODY DYNAMICS</p> <p>7648 A COMPARISON OF NUMERICAL METHODS FOR SOLVING MULTIBODY DYNAMICS PROBLEMS WITH FRICTIONAL CONTACT MODELED VIA DIFFERENTIAL VARIATIONAL INEQUALITIES <i>Daniel Melanz, Luning Fang, Dan Negruț</i></p>	Room 7	<p>MS 808 - 1: MULTISCALE AND MULTIPHYSICS MODELING OF CEMENTITIOUS MATERIALS</p> <p><i>MS Organizers:</i> Jörg F. Unger, Thomas Titscher <i>Chair:</i> Thomas Titscher</p> <p>9838 THE BENEFIT OF MESOSCALE MODELS FOR CONCRETE TO UNDERSTAND ITS COMPLEX MACROSCOPIC BEHAVIOR <i>Jörg F. Unger, Volker Hirthammer, Philip Huschke, Peter Otto, Thomas Titscher</i></p> <p>9859 A MESOSCALE, MULTI-PHYSICS, FINITE-ELEMENT-MODEL OF CONCRETE TO PREDICT THE LONG TERM BEHAVIOR <i>Volker Hirthammer</i></p> <p>5933 A MULTI-SCALE TEMPORAL INTEGRATION SCHEME FOR VISCOPLASTIC SOLIDS SUBJECTED TO FATIGUE DETERIORATION <i>Vitaliy Kindrachuk, Jörg F. Unger</i></p> <p>10559 SIMULATION OF LONG-TERM DEFORMATIONS IN FASTENING SYSTEMS: MULTI-PHYSICS FRAMEWORK <i>Giannis Boumakis, Mehran Shahidi, Marco Marcon, Jan Vorel, Roman Wendner</i></p>

DAY 5 – FRIDAY, JUNE 10

<p>Friday, June 10 9:00-11:00</p> <p>MS 802 - 1: ADVANCES IN THE MODELLING OF MULTI-SCALE, MULTI-PHYSICS AND MULTI-UNCERTAINTY PROBLEMS</p> <p><i>MS Organizers:</i> Francisco M. Andrade Pires, Chengfeng Li <i>Chair:</i> Francisco M. Andrade Pires, Chengfeng Li</p> <p>10767 HIGHER-ORDER ASYMPTOTIC HOMOGENIZATION OF PERIODIC MATERIALS WITH LOW SCALE SEPARATION <i>Maqsood Mohammed Ameen, R.H.J. Peerlings, M.G.D. Geers</i></p> <p>10301 MULTI-SCALE WEAVE ALGORITHM FOR STATISTICAL RECONSTRUCTION OF HETEROGENEOUS MATERIALS <i>Shaoqing Cui, Chengfeng Li</i></p> <p>5581 ANALYSIS OF YIELD CRITERIA OF POROUS DUCTILE MATERIALS THROUGH COMPUTATIONAL HOMOGENIZATION AT FINITE STRAINS <i>R. P. Carvalho, I. A. R. Lopes, S. H. Wu, F. M. Andrade Pires</i></p> <p>5612 ANALYSIS OF PARALLELIZATION STRATEGIES FOR THE SOLUTION OF HOMOGENIZATION-BASED MULTISCALE MODELS <i>Igor André Rodrigues Lopes, Francisco Manuel Andrade Pires</i></p> <p>5625 THEORETICAL PREDICTION OF PLASTIC INSTABILITY FOR ASYMMETRICAL MATERIALS <i>Shenghua Wu, Nannan Song, F. M. Andrade Pires</i></p> <p>9283 COUPLED VS. STAGGERED SOLUTIONS STRATEGIES FOR ELECTRO-MECHANICS IN THE HEART <i>Xiaozhou Li, Marco Favino, Rolf Krause, Simone Pezzuto, Sonia Pozzi</i></p>	<p>Room 8</p>	<p>Friday, June 10 9:00-11:20</p> <p>MS 1013: SOLUTION OF LARGE-SCALE INVERSE PROBLEMS</p> <p><i>MS Organizers:</i> Clint Dawson, Steve Mattis, Troy Butler, Lindley Graham <i>Chair:</i> Steve Mattis</p> <p>10817 MEASURE-THEORETIC PARAMETER ESTIMATION FOR HURRICANE STORM SURGE <i>Lindley Graham, Clint Dawson, Troy Butler</i></p> <p>10870 ERROR ESTIMATION AND CONTROL FOR STOCHASTIC INVERSION OF GROUNDWATER CONTAMINATION PROBLEMS <i>Steven Mattis, Troy Butler, Clint Dawson</i></p> <p>9975 DATA ASSIMILATION USING MRI DATA <i>Geir Nævdal, Ove Sævareid, Rolf J. Lorentzen</i></p> <p>11225 D-OPTIMAL EXPERIMENTAL DESIGN FOR INFINITE-DIMENSIONAL BAYESIAN LINEAR INVERSE PROBLEMS <i>Alen Alexanderian, Arvind K. Saibaba</i></p> <p>12107 ENHANCED ENSEMBLE KALMAN FILTERING WITH ONE-STEP-AHEAD-SMOOTHING <i>Boujemaa Ait-El-Fquih, Naila Raboudi, Omar Knio, Clint Dawson, Ibrahim Hoteit</i></p> <p>12108 BAYESIAN INFERENCE OF SOURCE PARAMETERS FOR THE CHILE 2010 TSUNAMI <i>Loic Giraldi, Olivier Le Maître, Omar Knio, Clint Dawson, Kyle Mandli, Ibrahim Hoteit</i></p> <p>9517 UNIDENTIFIABILITY OF ILL-POSED INVERSE PROBLEMS <i>Velimir Vesselinov, Dan O'Malley</i></p>	<p>Room 11</p>
<p>Friday, June 10 9:00-11:00</p> <p>MS 908 - 1: VERIFICATION AND VALIDATION OF STRUCTURAL MECHANICS SIMULATION MODELS</p> <p><i>MS Organizers:</i> George Lampeas <i>Chair:</i> Athanasios Dafnis</p> <p>5901 EXPERIMENTAL VALIDATION OF COMPOSITE STRUCTURES IN EXPLICIT DYNAMICS ANALYSIS <i>Konstantinos Fotopoulos, George Lampeas</i></p> <p>7386 EXPERIMENTAL VALIDATION OF A MODEL UPDATE PROCEDURE FOCUSING ON SMALL GEOMETRIC DEVIATIONS <i>Thomas Maywald, Arnold Kühhorn, Sven Schräge</i></p> <p>7362 CODE VERIFICATION IN SHELL ANALYSIS BY THE METHOD OF MANUFACTURED SOLUTIONS <i>Michael Gfrerer, Martin Schanz</i></p> <p>7797 APPLICATION OF METHODS OF MANUFACTURED SOLUTION AND NEARBY PROBLEMS TO NONLINEAR SOLID MECHANICS <i>Takahiro Yamada</i></p> <p>10834 INVESTIGATION IN THE MECHANICAL BEHAVIOUR OF LOW-VELOCITY IMPACTED CFRP PLATES UNDER DIFFERENT BOUNDARY CONDITIONS <i>Süleyman Arslan, Zamaan Sadeghi, Athanasios Dafnis, Kai-Uwe Schröder</i></p>	<p>Room 9</p>	<p>Friday, June 10 9:00-11:00</p>	<p>Room 12</p>
<p>MS 1211: COMPUTATIONAL STRATEGIES FOR STRUCTURAL ROBUSTNESS ASSESSMENT</p> <p><i>MS Organizers:</i> Domenico Asprone, Fulvio Parisi <i>Chair:</i> Fulvio Parisi</p> <p>6688 IMPLEMENTATION OF PROGRESSIVE DAMAGE IN FINITE ELEMENT CODES FOR THE ASSESSMENT OF ROBUSNESS <i>Domenico Asprone, Bernardino Chiaia, Valerio De Biagi, Gaetano Manfredi, Fulvio Parisi</i></p> <p>5285 PROGRESSIVE COLLAPSE FRAGILITY MODELS OF RC FRAMED BUILDINGS BASED ON PUSHDOWN ANALYSIS <i>Emanuele Brunesi, Roberto Nascimbene, Fulvio Parisi</i></p> <p>4515 ROBUSTNESS OF STRUCTURES CONSTRUCTED WITH INDUSTRIALIZED REINFORCED CONCRETE WALLS <i>Rina Farhat, Nicolae Gluck, Rami Eid</i></p> <p>5566 MECHANICAL PROPERTIES OF S355 UNDER EXTREME COUPLED EFFECT OF HIGH TEMPERATURES AND HIGH STRAIN RATES <i>Daniele Forni, Bernardino Chiaia, Ezio Cadoni</i></p> <p>12309 FINITE ELEMENT ASSESSMENT OF THE COLLAPSE POTENTIAL OF STEEL BEAMS IN FIRE <i>Demos Demosthenous, Dimos C. Charmpis</i></p> <p>16749 SEISMIC RESIDUAL CAPACITY ASSESSMENT OF FRAMED STRUCTURES DAMAGED BY EXCEPTIONAL ACTIONS <i>Antonio Formisano, Giuseppe Iazzetta, Giuseppe Marino, Francesco Fabbrocino, Raffaele Landolfo</i></p>			

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Friday, June 10 9:00-11:00	Room 15	Friday, June 10 9:00-11:00	Room 18
CS 980: NUMERICAL AND SYMBOLIC COMPUTATION <i>Chair:</i> Hipólito Sousa		MS 804 - 2: MULTISCALE AND COMPUTATIONAL APPROACHES TO FRACTURE AND FAILURE <i>MS Organizers:</i> Haim Waisman, Caglar Oskay <i>Chair:</i> Haim Waisman	
9264 CONTRIBUTION OF NUMERICAL THERMAL SIMULATION OF MASONRY TO THE GLOBAL OBJECTIVE OF BUILDINGS ENERGY EFFICIENCY <i>Hipólito Sousa, Rui Sousa, Luís Silva, Gonçalo Sousa</i>		6596 A NON-LOCAL APPROACH TO LIFE TIME PREDICTION OF CORD-RUBBER COMPOSITE STRUCTURE <i>Niraj Kumar Jha, Udo Nackenhorst, Tobias Helmich, Claudia Lillie</i>	
4906 MODERNIZING SOFTWARE IN SCIENCE AND ENGINEERING: FROM C/C++ APPLICATIONS TO MOBILE PLATFORMS <i>Liliana Favre, Claudia Pereira, Liliana Martinez</i>		8312 PREDICTING DUCTILE FRACTURE IN FERROUS AND NONFERROUS METALS DURING UPSET FORGING USING AN ELLIPSOIDAL VOID MODEL <i>Kazutake Komori</i>	
11754 NUMERICAL SIMULATION OF AXISYMMETRIC ELASTICITY PROBLEMS IN SEMI-INFINITE DOMAINS BY A DTN FEM APPROACH <i>Eduardo Godoy, Mario Durán</i>		7973 PHASE-FIELD MODELING OF AUTOGENOUS SHRINKAGE IN RESTRAINED CEMENT PASTE <i>Jafar Amani Dashlejeh, Pietro Lura, Jason Weiss, Angelo Simone</i>	
8464 NEW EDUCATIONAL MATLAB TOOL TO EXPLAIN TWO DIMENSIONAL FINITE ELEMENT METHOD TO GRADUATE STUDENTS <i>Rafet Sisman, Abdurrahman Sahin</i>		6109 A NEW INTERFACE DAMAGE MODEL FOR MODELING DELAMINATION USING THICK LEVEL SET METHOD <i>Mohammad Latifi, F.P. van der Meer, L.J. Sluys</i>	
11259 KOITER ASYMPTOTIC ANALYSIS OF VARIABLE-ANGLE TOW COMPOSITE PLATES <i>Antonio Madeo, Giuseppe Zagari, Giovanni Zucco, Rainer Groh, Paul Weaver, Raffaele Zinno</i>		7931 ANALYSIS OF A BI-PIEZOELECTRIC CERAMIC LAYER WITH AN INTERFACIAL CRACK SUBJECTED TO IN-PLANE MECHANICAL AND ELECTRICAL LOADING <i>Mojtaba Biglar, Magdalena Gromada, Feliks Stachowicz, Tomasz Trzepiecinski</i>	
16721 CONNECTING MODELS AND TOOLS FOR DEVELOPING CYBER-PHYSICAL-SYSTEMS – THE INTO-CPS PROJECT <i>Christian Koenig</i>			

Friday, June 10 9:00-11:00	Room 17	Friday, June 10 9:00-11:00	Room 20
MS 1311: ADAPTIVE METHODS FOR FORWARD AND INVERSE PROPAGATION OF UNCERTAINTY IN COMPUTATIONAL MODELS <i>MS Organizers:</i> Timothy M. Wildey, Anca C. Belme <i>Chair:</i> Anca C. Belme		MS 905 - 5: DISCONTINUOUS GALERKIN METHODS: NEW TRENDS AND APPLICATIONS <i>MS Organizers:</i> Sonia Fernández-Méndez, Nicoletta Franchina <i>Chair:</i> Sonia Fernández-Méndez, Nicoletta Franchina	
4739 ADAPTIVE RESPONSE SURFACE APPROXIMATIONS FOR BAYESIAN INFERENCE <i>Timothy Wildey, John Jakeman, Troy Butler</i>		4596 EXTENDED HYBRIDIZABLE DISCONTINUOUS GALERKIN (X-HDG) FOR BIMATERIAL PROBLEMS <i>Ceren Gürkan, Sonia Fernández-Méndez, Esther Sala-Lardies, Martin Kronbichler</i>	
6307 ADAPTIVE SAMPLE BASED INTEGRATION TECHNIQUES IN INVERSE AND PREDICTION UQ PROBLEMS <i>Troy Butler, Lindley Graham, Steven Mattis, Scott Walsh</i>		10879 A RECOVERY DISCONTINUOUS GALERKIN METHOD WITH IMPROVED ADVECTION FOR THE COMPRESSIBLE NAVIER-STOKES EQUATIONS <i>Philip Johnson, Eric Johnsen</i>	
7995 A POSTERIORI ERROR ESTIMATE FOR THE NAVIER-STOKES EQUATIONS IN RANDOM DOMAINS SOLVED WITH A PERTURBATION TECHNIQUE <i>Diane Guignard, Fabio Nobile, Marco Picasso</i>		7332 A HIGH-PERFORMANCE DISCONTINUOUS GALERKIN SOLVER FOR THE SIMULATION OF INCOMPRESSIBLE TURBULENT FLOW <i>Martin Kronbichler, Benjamin Krank, Niklas Fehn, Wolfgang A. Wall</i>	
8454 GOAL-BASED STOCHASTIC AND DETERMINISTIC ERROR ESTIMATES FOR ADAPTIVE CONTROL IN COMPRESSIBLE CFD PROBLEMS <i>Jan Willem Van Langenhove, Didier Lucor, Anca Belme</i>		5962 A SYMMETRIC INTERIOR PENALTY DISCONTINUOUS GALERKIN METHOD WITH LOCAL TIME STEPPING FOR ANISOTROPIC ELASTICITY PROBLEMS <i>Sjoerd Geevers, Jaap van der Vegt, Wim Mulder</i>	
7666 ACCELERATION OF BAYESIAN CALIBRATION FOR PREDICTIVE UNCERTAINTY QUANTIFICATION IN AEROELASTIC FLUTTER <i>Christian Thomas Nitschke, Jean-Camille Chassaing</i>		7192 A STAGGERED ARBITRARY HIGH ORDER SEMI-IMPLICIT DISCONTINUOUS GALERKIN METHOD FOR THE INCOMPRESSIBLE NAVIER-STOKES EQUATIONS <i>Maurizio Tavelli, Michael Dumbser</i>	
11684 DENSITY ESTIMATION FOR A CLASS OF ELLIPTIC PROBLEMS ON STOCHASTICALLY PERTURBED DOMAINS <i>Jehanzeb Chaudhry, Don Estep, Nathaniel Burch</i>		7439 ACCURATE MODELING OF LIGHT PROPAGATION THROUGH PHOTONIC CRYSTALS <i>Devashish Devashish, Willem L. Vos, Jaap J W van der Vegt</i>	

DAY 5 – FRIDAY, JUNE 10

<p>Friday, June 10 9:00-11:00</p> <p>MS 910 - 2: HIGH ORDER CFD METHODS: CONCLUSIONS AND OUTLOOK</p> <p><i>MS Organizers:</i> Koen Hillewaert, John Ekaterinaris, Peter Vincent, Norbert Kroll, Norbert Huynh, Z.J. Wang</p> <p><i>Chair:</i> Peter Vincent</p> <p>9345 KEYNOTE: TOWARDS THE INDUSTRIAL ADOPTION OF GPU-ACCELERATED HIGH-ORDER COMPUTATIONAL FLUID DYNAMICS <i>Peter Vincent</i></p> <p>9697 CURVED GRID GENERATION AND DG COMPUTATION FOR THE DLR-F11 HIGH LIFT CONFIGURATION <i>Ralf Hartmann, Harlan McMorris, Tobias Leicht</i></p> <p>11139 ON THE IMPLEMENTATION OF X-LES IN A HIGH-ORDER IMPLICIT DG SOLVER <i>Francesco Bassi, Lorenzo Botti, Alessandro Colombo, Andrea Crivellini, Antonio Ghidoni, Marco Lorini, Francesco Carlo Massa, Gianmaria Noventa</i></p> <p>8042 APPLICATIONS OF HIGH ORDER HYBRID DG/FV SCHEMES ON CURVILINEAR MESHES <i>Li Ming, Liu Wei, Zhang Laiping, He Xin</i></p> <p>15373 BS1 : DIRECT NUMERICAL SIMULATION OF THE TAYLOR-GREEN VORTEX AT RE = 1600 <i>Andrea Mastellone, Luigi Cutrone, Francesco Capuano</i></p>	<p>Room 21</p>	<p>Friday, June 10 9:00-11:00</p> <p>MS 1011 - 1: SURROGATE-ASSISTED EVOLUTIONARY ALGORITHMS IN AERODYNAMIC DESIGN/OPTIMIZATION</p> <p><i>MS Organizers:</i> Varvara Asouti, Esther Andrés, Emiliano Iuliano</p> <p><i>Chair:</i> Varvara Asouti</p> <p>8857 A NOVEL IMPLEMENTATION OF COMPUTATIONAL AERODYNAMIC SHAPE OPTIMISATION USING MODIFIED CUCKOO SEARCH AND REDUCED ORDER MODELLING <i>David Stefan Naumann, Ben Evans, Oubay Hassan</i></p> <p>6765 MULTIOBJECTIVE OPTIMIZATION WITH GAUSSIAN PROCESS FOR DISTRIBUTED COMPUTING <i>Jonathan Guerra, Patricia Klotz, Fabrice Gamboa, Patrick Cattiaux, Nicolas Dolin</i></p> <p>8407 ON THE INFLUENCE OF A PRIORI SAMPLING METHODS ON SURROGATE MODELS ACCURACY IN AIRCRAFT AERODYNAMIC DESIGN OPTIMIZATION <i>Raul Yondo, Esther Andrés, Eusebio Valero</i></p> <p>9174 MULTI-FIDELITY EXTENSION TO NON-INTRUSIVE PROPER ORTHOGONAL DECOMPOSITION BASED SURROGATES <i>Tariq Benamara, Piotr Breitkopf, I. Lepot, Caroline Sainvitu</i></p> <p>11229 THE RBF4AERO BENCHMARK TECHNOLOGY PLATFORM <i>Massimo Bernaschi, Alessandro Sabellico, Giorgio Urso, Emiliano Costa, Stefano Porziani, Fabrizio Lagasco, Corrado Groth, Ubaldo Cella, Marco Evangelos Biancolini, Dimitrios H. Kapsoulis, Varvara G. Asouti, Kyriakos C. Giannakoglou</i></p>	<p>Room 23</p>
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11:00-11:30
Coffee Break

TECHNICAL SESSIONS

<p>Friday, June 10 11:30-13:30</p> <p>MS 602 - 5: INNOVATIVE METHODS FOR FLUID-STRUCTURE-INTERACTION</p> <p><i>MS Organizers:</i> E. Harald van Brummelen, Roger Ohayon, Trond Kvamsdal <i>Chair:</i> E. Harald van Brummelen</p> <p>10051 A FLEXIBLE FLUID STRUCTURE INTERACTION COUPLING SCHEME FOR TIRE APPLICATIONS – INTERFACE ENERGY CONSIDERATIONS <i>Julien Gillard, Vincent Decouvreur, Wolfgang A. Wall</i></p> <p>9110 USING IMPROVED RADIAL BASIS FUNCTIONS METHODS FOR FLUID-STRUCTURE COUPLING AND MESH DEFORMATION <i>Giorgos Strofylas, Georgios Mazanakis, Sotirios Sarakinos, Georgios Lygidakis, Ioannis Nikолос</i></p> <p>9228 FRAMEWORK FOR FLUID-STRUCTURE INTERACTION WITH CONTACT AND ITS APPLICATIONS IN BIOMECHANICS <i>Johan Jansson, Jeannette Spühler, Niyazi Cem Degirmenci, Van Dang Nguyen, Johan Hoffman,</i></p> <p>5922 ACOUSTIC ANALYSIS OF FLOW-INDUCED VIBRATIONS OF A FLEXIBLE PLATE MODELING THE SOFT PALATE <i>Mohammadtaghi Khalili, Martin Larsson, Bernhard Müller</i></p> <p>8991 SPLINE-BASED METHODS FOR INTERACTION BETWEEN FREE-SURFACE FLOWS AND ELASTIC STRUCTURES <i>Norbert Hosters, Stefanie Elgeti, Marek Behr</i></p>	<p>Minos East</p> <p>MS 1008: ULTRASONIC GUIDED WAVES TESTING AND MONITORING</p> <p><i>MS Organizers:</i> Yaacoubi Slah, Nico Declercq <i>Chair:</i> Yaacoubi Slah</p> <p>11417 INVESTIGATIONS OF MECHANICAL GUIDED WAVES PROPAGATION IN PIPES REPAIRED LOCALLY BY COMPOSITE PATCHES <i>Slah Yaacoubi, Weina Ke</i></p> <p>7651 LAMINATE ELEMENT METHOD AND ITS APPLICATION TO THE STUDY OF GUIDED WAVE RESONANCE PHENOMENA IN LAYERED ELASTIC STRUCTURES WITH DEFECTS <i>Evgeny Glushkov, Natalia Glushkova, Artem Eremin, Rolf Lammering</i></p>
<p>Friday, June 10 11:30-13:30</p> <p>MS 606 - 3: COMPUTATIONAL MODELING OF HYDRAULIC FRACTURING</p> <p><i>MS Organizers:</i> Gianluca Cusatis, Gilles Pijaudier-Cabot, Günther Meschke <i>Chair:</i> Thomas-Peter Fries</p> <p>8716 KEYNOTE: XFEM AND PHASEFIELD MODELING OF HYDRAULIC FRACTURING PROCESSES <i>Günther Meschke, Dirk Leonhart, Ildar Khisamitov, Seyed Mohseni, Sven Beckhuis, Jithender J. Timothy</i></p> <p>8222 GEOMECHANICAL MODELING OF INDUCED MICROSEISMICITY <i>Mirko van der Baan, Drew Chorney, Vincent Roche</i></p> <p>9294 NUMERICAL MODELLING OF COUPLED HYDRO-THERMAL PROCESSES OF THE SOULTZ HETEROGENEOUS GEOTHERMAL SYSTEM <i>Musa Dahru Aliyu, Hua-peng Chen</i></p> <p>9321 MULTISCALE DISCRETE MODELING OF THE MECHANICAL BEHAVIOR OF BLACK SHALE <i>Weixin Li, Roman Wendner, Gianluca Cusatis</i></p> <p>9363 HYDRAULIC FRACTURING SIMULATION WITH A PHASE FIELD APPROACH <i>Yongxing Shen, Vahid Ziae Rad, Cheng Cheng, Li Shen</i></p>	<p>Athena</p>
<p>Friday, June 10 11:30-13:30</p> <p>MS 922 - 2: HIGH-ORDER METHODS FOR ELASTIC WAVES AND THEIR APPLICATION</p> <p><i>MS Organizers:</i> Thomas Hagstrom, Daniel Appelo <i>Chair:</i> Thomas Hagstrom</p> <p>8752 AN ENERGY-BASED DISCONTINUOUS GALERKIN DISCRETIZATION OF THE ELASTIC WAVE EQUATION IN SECOND ORDER FORM <i>Daniel Appelo, Thomas Hagstrom</i></p> <p>16013 DYNAMIC EARTHQUAKE RUPTURE SIMULATIONS ON NONPLANAR FAULTS EMBEDDED IN 3D, HETEROGENEOUS ELASTIC-PLASTIC SOLIDS <i>Kenneth Duru</i></p> <p>5224 WAVE PROPAGATION IN HIGHLY HETEROGENEOUS MEDIA: SCALABILITY OF THE MESH AND RANDOM PROPERTIES GENERATOR <i>Jose Camata, Lucio Correa, Luciano Paludo, Regis Cottreau, Alvaro Coutinho</i></p> <p>8606 THREE-DIMENSIONAL FULL WAVEFORM INVERSION OF SHORT-PERIOD TELESEISMIC WAVEFIELDS BASED UPON A COUPLED SPECTRAL-ELEMENT METHOD <i>Dimitri Komatitsch, Vadim Monteiller, Yi Wang, Sébastien Chevrot</i></p>	<p>Minos North</p> <p>MS 805 - 2: ADVANCED MULTI-PHYSICS AND MULTI-SCALE TECHNIQUES FOR MODELING INELASTIC PROCESSES IN SOLIDS: DAMAGE, FRACTURE AND CONTACT MECHANICS</p> <p><i>MS Organizers:</i> Mauro Corrado, Marco Paggi, José Reinoso <i>Chair:</i> José Reinoso</p> <p>9675 MODELING OF FRAGMENTATION IN TEMPERED GLASS WITH THE COHESIVE ELEMENT METHOD <i>Mauro Corrado, Marco Vocialta, Jean-Francois Molinari</i></p> <p>10150 HOMOGENIZATION OF COMPOSITES SUBJECTED TO DAMAGE, FRACTURE AND UNILATERAL CONTACT <i>Sonia Marfia, Elio Sacco</i></p> <p>9222 MULTISCALE SOLUTION METHODS FOR CONTACT, FRICTION, AND FRACTURE PROBLEMS <i>Rolf Krause, Roger Müller</i></p>
<p>Friday, June 10 11:30-13:30</p>	<p>Aphrodite</p>

DAY 5 – FRIDAY, JUNE 10

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| <p>10239 A THREE DIMENSIONAL CONCURRENTLY COUPLED ADAPTIVE MULTISCALE METHOD FOR FRACTURE
<i>Pattabhi Budarapu, José Reinoso, Marco Paggi</i></p> <p>7713 IDENTIFICATION OF PHASE FIELD PARAMETERS FOR A DYNAMIC CRACK PROPAGATION BENCHMARK
<i>Clément Roux-Langlois, Jean-François Molinari</i></p> | <p>6888 NUMERICAL ANALYSIS OF FRICTIONLESS CONTACT BETWEEN 3-D BEAMS WITH CIRCULAR CROSS-SECTION
<i>Olga Kawa, Przemysław Litewka, Robert Studzinski</i></p> <p>7658 MULTISCALE FEM APPROACH FOR HYSTERESIS FRICTION AND ADHESION OF RUBBER ON ROUGH SURFACES
<i>Paul Wagner, Peter Wriggers, Heiko Clasen, Corinna Prange</i></p> |
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Friday, June 10	Apollo East
11:30-13:30	

MS 713 - 2: MICROSTRUCTURE-BASED MODELLING OF HETEROGENEOUS MATERIALS

MS Organizers: Jan Zeman, Jan Novak, Guillermo Díaz

Chair: Jan Zeman

- 6102** A COMPARATIVE STUDY OF DIFFERENT CRYSTAL PLASTICITY THEORIES: CLASSICAL VS. STRONG DISCONTINUITIES APPROACH
Guillermo Díaz, Volker Fohrmeister, Jörn Mosler
- 11058** APPLICATION OF POLAR ELASTICITY TO THE PROBLEM OF PURE BENDING OF A THICK PLATE
Svitlana Fedorova, Jiří Burša
- 10666** A MICRO-MACRO DESCRIPTION FOR ELASTICITY OF GRANULAR MATERIALS
Nishant Kumar, Stefan Luding, Vanessa Magnanimo
- 11911** ARTIFICIAL MICROSTRUCTURE GENERATOR FOR DUAL-PHASE STEELS
Yuliang Hou, Alexandre Dumon, Pierre Culière, Mohamed Rachik
- 7768** HOMOGENIZATION TECHNIQUES FOR ACCURATE AND APPROXIMATE ESTIMATES FOR OVERALL PROPERTIES OF MICROCRAKED VISCOELASTIC MASONRIES
Amina Rekik, Alain Gasser
- 7985** ACCOUNTING FOR TEMPERING OF MARTENSITE IN MULTISCALE MODELLING OF PHASE TRANSFORMATIONS IN DUAL PHASE STEELS BASED ON THE SOLUTION OF CARBON DIFFUSION EQUATION.
Krzysztof Bzowski, Monika Pernach, Maciej Pietrzyk

Friday, June 10	Apollo West
11:30-13:30	

MS 610: NUMERICAL METHODS TO STUDY THE CONTACT MECHANICS OF DRY, ADHESIVE AND LUBRICATED ROUGH SURFACES

MS Organizers: Carmine Putignano, Daniele Dini

Chair: Carmine Putignano

- 11227** A PARAMETRICALLY TIME-DEPENDENT METHODOLOGY FOR RECIPROCATING CONTACT MECHANICS BETWEEN VISCOELASTIC SOLIDS
Carmine Putignano, Giuseppe Carbone, Daniele Dini
- 8176** PERCOLATION PROPERTIES OF THE NETWORK OF FREE CHANNELS IN SEALING APPLICATIONS
Cinat Paolo, Paggi Marco, Borri Claudia
- 11261** STATISTICAL AND GEOMETRICAL CHARACTERISTICS OF RANDOMLY ROUGH SURFACES USED FOR CONTACT SIMULATIONS.
Rafael Schouwenaars, Carlos G. Figueroa, Víctor Hugo Jacobo, Armando Ortiz

Friday, June 10	Room 1
11:30-13:30	

MS 707 - 2: MICROMECHANICAL MODELLING: COMPETITION BETWEEN ANALYTICAL AND NUMERICAL METHODS

MS Organizers: Siegfried Schmauder, Vera Petrova

Chair: Alla Balueva

- 7510** KEYNOTE: EFFECTIVE ELASTICITY COEFFICIENTS IN DRY POROUS MATERIALS. NUMERICAL AND SEMI-ANALYTICAL APPROACHES
Vladimir Sladek, Bruno Musil, Jan Sladek
- 10814** MODELING AND ANALYSIS OF FRACTURE OF FUNCTIONALLY GRADED COATINGS SUBJECT TO THERMO-MECHANICAL LOADING
Vera Petrova, Siegfried Schmauder
- 6124** THE INFLUENCE OF THE NONHOMOGENEOUS DISTRIBUTION OF REINFORCING PARTICLES ON THE STRENGTH OF METAL MATRIX COMPOSITES: MICROMECHANICAL MODELLING AND SIMULATION
Hai Qing
- 7250** ATOMISTIC AND CONTINUUM INVESTIGATION OF THE DYNAMIC TENSILE STRENGTH OF ALUMINUM AND IRON WITH FOREIGN NANOINCLUSIONS
Viktor Pogorelko, Alexander Mayer

Friday, June 10	Room 2
11:30-13:30	

MS 1303: ANALYSIS AND DESIGN OF SAFETY CRITICAL SYSTEMS UNDER UNCERTAINTY

MS Organizers: Edoardo Patelli, Michael Beer, Matteo Broggi, Francisco Alejandro Díaz De la O

Chair: Marco de Angelis

- 10737** POWER GRID ROBUSTNESS TO SEVERE FAILURES: TOPOLOGICAL AND FLOW BASED METRICS COMPARISON
Roberto Rocchetta, Edoardo Patelli
- 10693** EFFICIENT COMPUTATION OF FAILURE PROBABILITY BOUNDS BY MEANS OF LINE SAMPLING
Marco de Angelis, Edoardo Patelli
- 4995** IDENTIFICATION OF INTERVAL FIELDS FOR SPATIAL UNCERTAINTY REPRESENTATION IN FINITE ELEMENT MODELS
Matthias Faes, Jasper Cerneels, Dirk Vandepitte, David Moens
- 7012** INTRODUCTION OF BEADINGS INTO A CRASH TUBE USING A ROBUST OPTIMISATION APPROACH
Stefan Scheiblhofer
- 12037** INTERVAL FINITE ELEMENT ANALYSIS OF STRUCTURES WITH UNCERTAIN-BUT-BOUNDED PARAMETERS
Eugenio Romeo, Alba Sofi
- 7165** DYNAMICAL ANALYSIS OF PLATE MODELS WITH UNCERTAIN STRUCTURAL PROPERTIES USING THE INTERVAL FIELD METHOD
Maurice Imholz, Dirk Vandepitte, David Moens

DAY 5 – FRIDAY, JUNE 10

<p>Friday, June 10</p> <p>11:30-13:30</p> <p>CS 1202 - 2: STRUCTURAL ANALYSIS AND MULTI BODY DYNAMICS</p> <p><i>Chair:</i> Pavel Polach</p> <p>9407 APPROACHES TO THE CREATION OF MULTIBODY MODELS OF THE VVER 1000 NUCLEAR REACTOR CONTROL ASSEMBLY <i>Pavel Polach, Michal Hajžman</i></p> <p>7895 ON THE NUMERICAL INFLUENCES OF INERTIA REPRESENTATION FOR RIGID BODY DYNAMICS <i>Xiaoming Xu, Wanxie Zhong</i></p>	<p>Room 4</p> <p>11003 REINFORCEMENT CORROSION IN CONCRETE DUE TO CARBONATION AND CHLORIDE INGRESS UP AND BEYOND INDUCTION PERIOD <i>Vit Smilauer, Libor Jendele, Jan Cervenka, Karolina Hajkova</i></p> <p>9556 CHLORIDE DIFFUSION THROUGH THE INTERFACIAL TRANSITION ZONE BETWEEN AGGREGATES AND CEMENT PASTE IN CONCRETE <i>Pietro Carrara, Laura De Lorenzis</i></p> <p>9527 COMPUTATIONAL MODELING OF THE INTERACTION BETWEEN CRACKING, CHLORIDE DIFFUSION AND BINDING IN HARDENED CEMENT PASTE <i>Tao Wu, Pietro Carrara, Laura De Lorenzis</i></p>
<p>CS 1301: MOLECULAR DYNAMICS</p> <p><i>Chair:</i> Clara Salueña</p> <p>9571 ENFORCING ENERGY CONSERVATION IN MOLECULAR DYNAMICS SIMULATIONS <i>Josep Bonet, Clara Salueña</i></p> <p>8655 COARSE GRAINING NON-EQUILIBRIUM SYSTEMS AND PATH SPACE INFORMATION THEORY <i>Evangelia Kalligianaki, Vagelis Harmandaris, Markos Katsoulakis, Petr Plechac</i></p> <p>9122 SIMULATION OF CABIN AIR FILTERS - MOLECULAR DYNAMICS VS. CONTINUUM APPROACH <i>Carolin Schober, David Keerl, Martin J. Lehmann, Miriam Mehl</i></p>	<p>Friday, June 10</p> <p>11:30-13:30</p> <p>MS 802 - 2: ADVANCES IN THE MODELLING OF MULTI-SCALE, MULTI-PHYSICS AND MULTI-UNCERTAINTY PROBLEMS</p> <p><i>MS Organizers:</i> Francisco M. Andrade Pires, Chengfeng Li <i>Chair:</i> Francisco M. Andrade Pires, Chengfeng Li</p> <p>6335 STRUCTURAL RELIABILITY ANALYSIS – A REVIEW AND COMPARISON STUDY <i>Muhannad Aldosary, Chenfeng Li</i></p> <p>8777 APPLICATION OF THE MULTISCALE FEM TO THE DETERMINATION OF MACROSCOPIC DEFORMATIONS CAUSED BY DISSOLUTION-PRECIPITATION CREEP <i>Sandra Klinge, Jörm Mosler, Klaus Hackl</i></p> <p>6768 NUMERICAL MODELLING OF AMORPHOUS POLYMERS: FORMULATION AND IMPLEMENTATION <i>Fernando Pala Beirão Macedo, Shenghua Wu, Seyed Mohsen Mirkhalaf Valashani, Francisco Manuel Andrade Pires</i></p> <p>8869 MULTISCALE SIMULATION OF THREE-DIMENSIONAL UNSTEADY GAS FLOWS IN MICROCHANNELS OF TECHNICAL SYSTEMS <i>Viktorija Podryga, Yury Karamzin, Tatiana Kudryashova, Sergey Polyakov</i></p> <p>12009 AUGMENTED SURROGATES FOR UNCERTAINTY QUANTIFICATION OF FUSION PLASMAS <i>Varis Carey, Robert Moser, C.S. Chang, Craig Michoski</i></p>
<p>Friday, June 10</p> <p>11:30-13:30</p> <p>MS 1014: DESIGN OPTIMIZATION AND INVERSE PROBLEMS FOR WAVE PROPAGATION PROBLEMS</p> <p><i>MS Organizers:</i> Martin Berggren <i>Chair:</i> Martin Berggren</p> <p>10963 FULL-WAVEFORM INVERSION FOR THE RECONSTRUCTION OF ELECTROMAGNETIC PROPERTY PROFILES USING PLANE MICROWAVES <i>Namho Joh, Jun Won Kang</i></p> <p>5410 OPTIMIZATION OF JUNCTIONS OF OPEN WAVEGUIDES IN 2D <i>Julian Ott</i></p> <p>11745 TOWARDS A DIMENSIONALLY ADAPTIVE METHOD IN MAGNETOTELLURICS <i>Julen Alvarez-Aramberri, David Pardo</i></p> <p>9033 TOPOLOGY OPTIMIZATION OF WIDEBAND COMPACT WAVEGUIDE TRANSITIONS WITH MINIMAL-SIZE CONTROL <i>Emadelddeen Hassan, Linus Hägg, Eddie Wadbro, Martin Berggren</i></p>	<p>Room 5</p> <p>Friday, June 10</p> <p>11:30-13:30</p> <p>MS 908 - 2: MULTISCALE AND MULTIPHYSICS MODELING OF CEMENTITIOUS MATERIALS</p> <p><i>MS Organizers:</i> Jörg F. Unger, Thomas Titscher <i>Chair:</i> Jörg F. Unger</p> <p>7008 IMPLICIT/EXPLICIT (IMPL-EX) INTEGRATION OF THE GRADIENT ENHANCED DAMAGE MODEL <i>Thomas Titscher, Jörg F. Unger, Javier Oliver</i></p>
<p>Friday, June 10</p> <p>11:30-13:30</p> <p>MS 808 - 2: VERIFICATION AND VALIDATION OF STRUCTURAL MECHANICS SIMULATION MODELS</p> <p><i>MS Organizers:</i> George Lampeas <i>Chair:</i> George Lampeas</p> <p>5900 KEYNOTE: DEVELOPMENT AND VALIDATION OF A COMPOSITE FASTENED JOINT MODEL USING ADVANCED MEASUREMENT TECHNIQUES <i>Nikolaos Perogamvros, George Lampeas</i></p> <p>8600 OPTIMUM DESIGN, FINITE ELEMENT MODEL UPDATING AND DYNAMIC ANALYSIS OF A FULL LAMINATED GLASS PANORAMIC CAR ELEVATOR <i>Dimitrios Giagopoulos, Iraklis Chatziparasidis</i></p> <p>11192 A NEW SHELL FINITE ELEMENT WITH DRILLING DEGREES OF FREEDOM AND ITS RELATION TO EXISTING FORMULATIONS <i>Robert Winkler, Dimitrios Plakomytis</i></p>	<p>Room 9</p> <p>Friday, June 10</p> <p>11:30-13:30</p> <p>MS 908 - 2: MULTISCALE AND MULTIPHYSICS MODELING OF CEMENTITIOUS MATERIALS</p> <p><i>MS Organizers:</i> Jörg F. Unger, Thomas Titscher <i>Chair:</i> Jörg F. Unger</p> <p>7008 IMPLICIT/EXPLICIT (IMPL-EX) INTEGRATION OF THE GRADIENT ENHANCED DAMAGE MODEL <i>Thomas Titscher, Jörg F. Unger, Javier Oliver</i></p>

DAY 5 – FRIDAY, JUNE 10

- 11185** MODELING BONDED ANCHORS IN A DISCRETE ELEMENT FRAMEWORK
Marco Marcon, Jan Vorel, Roman Wendner

Friday, June 10 **Room 10**
11:30-13:30

MS 107: MULTI-SCALE MODELS IN BIOMECHANICS AND MECHANOTRANSDUCTION

MS Organizers: Suvrana De, Michael Sacks, Abdul Barakat
Chair: Catherine Pagiatakis

- 7416** 2D FINITE ELEMENT MODEL TO EXPLORE DUROTAXIS DURING SINGLE CELL MIGRATION
Rachele Allena, Mukund Gupta, Benoit Ladoux, Denis Aubry

- 7501** A NUMERICAL GEOMETRIC MULTISCALE EVALUATION OF THE LOCALIZED HAEMODYNAMIC INTERACTIONS WITHIN CORONARY BIFURCATION LESIONS
Catherine Pagiatakis, Jean-Claude Tardif, Philippe L. L'Allier, Rosaire Mongrain

- 9153** EFFECT OF RED BLOOD CELLS ON ENDOTHELIAL SHEAR STRESS IN MICROVESSELS
Brenna Hogan, Zaiyi Shen, Chaouqi Misbah, Abdul Barakat

Friday, June 10 **Room 15**
11:30-13:30

CS 610: AERO-ACOUSTICS

Chair: Smaïne Kouidri

- 7932** NUMERICAL INVESTIGATION OF THERMOACOUSTIC ENGINE USING IMPLICIT LARGE EDDY SIMULATION
Mustapha Mahdaoui, Rachid Bennacer, Smaïne Kouidri, N. Martaj

- 8111** AN OUTFLOW BUFFER ZONE BASED ON THE JET MEAN FLOW SELF-SIMILARITY
Carlos Moser, Andrea Da Ronch

- 11941** SEMI-DISCRETE COINCIDENCE IN THE MID-FREQUENCY SOUND TRANSMISSION THROUGH RIB-STIFFENED PANELS
Edwin Reynders, Cédric Van hoorickx, Arne Dijckmans

- 7916** USING SPECTRAL-RESOLUTION SCHEMES FOR THE SIMULATION OF RANKINE VORTEX INSTABILITY
Anatol V. Alexandrov, Ludwig W. Dorodnitsyn

- 4445** FLUID ANALYSIS USING FICTIONAL DOMAIN FINITE ELEMENT METHOD
Yukihiro Terakado, Tahahiko Kurahashi

- 7445** ON THE SIMULATION OF AERODYNAMIC NOISE WITH DIFFERENT TURBULENCE MODELS
Xin Huang, Michael Schäfer

Friday, June 10
11:30-13:30

Room 18

MS 804 - 3: MULTISCALE AND COMPUTATIONAL APPROACHES TO FRACTURE AND FAILURE

MS Organizers: Haim Waisman, Caglar Oskay
Chair: Haim Waisman

- 9300** KEYNOTE: STABILITY ANALYSIS OF THE PHASE FIELD METHOD FOR FRACTURE MECHANICS
Miguel Arriaga, Haim Waisman

- 12093** KEYNOTE: DISCONTINUOUS GALERKIN FORMULATION WITH NITSCHE FLUX FOR COHESIVE FRACTURE SIMULATIONS
M. Reza Hirmand, Katerina D. Papoulia

- 9284** DYNAMIC HYDRAULICALLY DRIVEN FRACTURE WITH XFEM
Robert Gracie, Matin Esfahani, Mohammad Komijani

- 11443** TEN YEARS OF INDUSTRIAL APPLICATIONS WITH THE EXTENDED FINITE ELEMENT METHOD
Eric Wyart, Benoît Dompierre, Olivier Pierard, Loïc Debeugny, Didier Soria

Friday, June 10
11:30-13:30

Room 21

MS 910 - 3: HIGH ORDER CFD METHODS: CONCLUSIONS AND OUTLOOK

MS Organizers: Koen Hillewaert, John Ekaterinidis, Peter Vincent, Norbert Kroll, Norbert Huynh, Z.J. Wang

Chair: Z.J. Wang

- 11177** KEYNOTE: SUMMARY AND CONCLUSIONS OF THE COMPUTATIONAL CHALLENGE TEST CASES
Koen Hillewaert, Tobias Leicht

- 8584** THE STUDY OF QUASI-ANALYSIS NEWTON/KRYLOV IMPLICIT DISCONTINUOUS GALERKIN METHOD FOR VISCOUS FLOW
Wei Liu, Laiping Zhang, Ming Li

- 8858** PERSPECTIVES AND NEEDS OF HIGH-ORDER METHODS FOR CFD INDUSTRIAL APPLICATIONS
Vincent Brunet, Xavier Garnaud, Michel Dumas, Thomas Fédérici, Gilles Leroy, Lorenzo Pons

- 9490** STABILITY AND ALGORITHMIC EFFICIENCY OF A HIGH ORDER FINITE VOLUME METHOD
Jean-Marie Le Gouez

- 12052** THE WING-TIP VORTEX TEST CASE.
Jean-Eloi Lombard, David Moxey, Spencer Sherwin

Friday, June 10 11:30-13:30	Room 23	
		8308 HEAT TRANSFER OPTIMIZATION OF A RIBBED SURFACE USING SURROGATE-ASSISTED GENETIC ALGORITHMS <i>Panagiotis Tsirikoglou, Ghader Ghorbaniasl, Simon Abraham, Chris Lacor</i>
		5101 CONSTRAINED MULTI-POINT AERODYNAMIC SHAPE OPTIMIZATION OF THE VISCOUS DPW WING THROUGH EVOLUTIONARY PROGRAMMING AND SUPPORT VECTOR MACHINES <i>Daniel González Juárez, Esther Andrés Pérez, Mario Jaime Martin Burgos</i>
		MS 1011 - 2: SURROGATE-ASSISTED EVOLUTIONARY ALGORITHMS IN AERODYNAMIC DESIGN/OPTIMIZATION <i>MS Organizers: Varvara Asouti, Esther Andrés, Emiliano Iuliano Chair: Varvara Asouti</i>
10088 EVOLUTIONARY AERODYNAMIC SHAPE OPTIMIZATION THROUGH THE RBF4AERO PLATFORM <i>Dimitrios Kapsoulis, Varvara Asouti, Kyriakos Giannakoglou, Stefano Porziani, Emiliano Costa, Corrado Groth, Ubaldo Cella, Marco Evangelos Biancolini</i>		
5627 PERFORMANCE COMPARISON OF KRIGING AND SVR SURROGATE MODELS APPLIED TO THE OBJECTIVE FUNCTION PREDICTION WITHIN AERODYNAMIC SHAPE OPTIMIZATION <i>Daniel Viúdez-Moreiras, Esther Andrés-Pérez, Daniel González-Juárez, Mario J. Martin Burgos</i>		
5102 SURROGATE-BASED GLOBAL OPTIMIZATION OF A CYLINDER BY THE USE OF EVOLUTIONARY ALGORITHMS, SUPPORT VECTOR MACHINES AND NON UNIFORM B-SPLINES <i>Esther Andrés-Pérez, Daniel González-Juárez, Mario J. Martin-Burgos, Leopoldo Carro-Calvo, Sancho Salcedo-Sanz</i>		

13:30-14:30
Lunch Break

PLENARY LECTURES

Friday, June 10	Zeus
14:30-16:00	

Chair: Thomas J.R. Hughes

12630 RECENT ADVANCES IN TOPOLOGY OPTIMIZATION

Ole Sigmund

10414 RECENT ADVANCES IN PARAMETRIC NONLINEAR MODEL ORDER REDUCTION: TREATMENT OF SHOCKS, CONTACT AND INTERFACES, STRUCTURE-PRESERVING HYPER REDUCTION, ACCELERATION OF MULTISCALE FORMULATIONS, AND APPLICATION TO DESIGN OPTIMIZATION

Charbel Farhat, P. Avery, T. Chapman, P. Collins, K. Washabaugh, M. Zahr

16:00-16:30

Closing Ceremony

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