ICCES 03

Start: 07:50 End: 08:00
OPENING REMARKS
D.E. Beskos (University of Patras GREECE)

CHAIR: D.E. Beskos (University of Patras GREECE)
paperID: 566 Start: 08:00 End: 09:00
PLENARY LECTURE - The Role of Quantitative Non-Destructive Evaluation in Structural Reliability Considerations
J. Achenbach (Northwestern University USA)

9-9:20 MORNING BREAK

Session A

WAVE PROPAGATION IN SOLIDS & FLUIDS
CHAIR: F.J. SANCHEZ-SESMA (Mexico National Autonomous University MEXICO)

paperID: 320 Start: 09:20 End: 09:50
KEYNOTE LECTURE: Spectral Element Methods for seismic wave propagation: some example of applications
Jean-Pierre Vilotte; Yann Capdeville; Gaetano Festa; Jean-Paul Ampuero

paperID: 420 Start: 09:50 End: 10:10
The Hydrodynamics of Wave Energy Devices
António J.N.A. Sarmento

paperID: 299 Start: 10:10 End: 10:30
Analysis and Maximization of Phononic Band Gaps in Infinitely Periodic Medium
Miguel Matos Neves

paperID: 295 Start: 10:30 End: 10:50
Diffraction of SH waves in weakly heterogeneous media
Ursula Iturrarán-Viveros

paperID: 207 Start: 10:50 End: 11:10
Wave scattering by elastic inclusions submerged in a fluid channel with an elastic floor
Luis Cortesão Godinho; António Barreto Tadeu; Julieta Pires António

paperID: 184 Start: 11:10 End: 11:40
KEYNOTE LECTURE: Large-scale Parallel 3D Simulation of Seismic Waves Using the Earth Simulator
Takashi Furumura

11:40-1:00 LUNCH BREAK

WAVE PROPAGATION IN SOLIDS & FLUIDS
CHAIR: A. TADEU (University of Coimbra PORTUGAL)

paperID: 203 Start: 13:00 End: 13:30
KEYNOTE LECTURE: The effect of a damaged zone on borehole acoustic logging
António Barreto Tadeu; Luis Cortesão Godinho

paperID: 296 Start: 13:30 End: 14:00
KEYNOTE LECTURE: Wave propagation in fractured media
Francisco J. Sánchez-Sesma

paperID: 329 Start: 14:00 End: 14:30
KEYNOTE LECTURE: A Desingularized Boundary Element Formulation for Acoustical Problems
Soeren Callsen; Otto von Estorff; Olgierd Zaleski

paperID: 308 Start: 14:30 End: 14:50
Acoustic wave propagation in capillary tubes (narrow tubes)- The design of sound probes
Edgar C. Fernandes

paperID: 206 Start: 14:50 End: 15:10
Scattering of Waves by Rigid Inclusions Buried Under a Fluid Channel via BEM
Julieta Pires António; António Barreto Tadeu; Luis Cortesão Godinho

3:10-3:30 AFTERNOON BREAK

NUMERICAL METHODS & STABILITY
CHAIR: D.E. BESKOS (University of Patras GREECE)

paperID: 52 Start: 15:30 End: 16:00
KEYNOTE LECTURE: First-principle based dynamic aircraft modeling for active control and MDO
Luigi Morino

paperID: 460 Start: 16:00 End: 16:30
KEYNOTE LECTURE: Some Recent Advances in Computational Dynamics
K. K. Tamma; R. Kanapady; S. Sandhu

paperID: 180 Start: 16:30 End: 16:50
Complex Dynamics of Perfect Discrete Systems Under Partial Follower Forces
Dimitris Sophianopoulos; Antony N Kounadis; Alexander F Vakakis

paperID: 269 Start: 16:50 End: 17:10
Nonlinear Buckling of Imperfect Systems with Bifurcation due to Symmetric Imperfections
George I. Ioannides; Ioannis G. Raftoyiannis; Anthony N. Kounadis

paperID: 267 Start: 17:10 End: 17:30
Local and Lateral-Torsional Buckling of Composite I-beams
Ioannis G. Raftoyiannis

paperID: 268 Start: 17:30 End: 17:50
Post-buckling Analysis of Thin-Walled Asymmetric Angle Cross-Sections under Axial Loading
X. Lignos; A. N. Kounadis

paperID: 223 Start: 17:50 End: 18:10
Evidence theory for uncertainty quantification in structural design
Ha-Rok Bae; Ramana V. Grandhi

Session B

CONTACT FATIGUE AND THERMOELASTIC CONTACT
CHAIR: W. BROCKS (GKSS Research Center GERMANY)

paperID: 139 Start: 09:20 End: 09:50
KEYNOTE LECTURE: Application of short crack arrest concepts to the prediction of thresholds in fretting fatigue
Daniele Dini; David Nowell

paperID: 242 Start: 09:50 End: 10:20
KEYNOTE LECTURE: An asymptotic approach for the correlation of complete, incomplete and almost complete Fretting Contacts
Daniele Dini; David A Hills

paperID: 240 Start: 10:20 End: 10:40
Transient solution of a non-homogenous thermoelastic contact problem
Abdullah M Al-Shabibi

paperID: 315 Start: 10:40 End: 11:00
The thermoelastic Aldo contact model with frictional sliding
Luciano Afferrante; Michele Ciavarella

paperID: 374 Start: 11:00 End: 11:20
New Approach to Hot Spots Generation in Disc Brakes
Stéphane Panier; Philippe Dufrenoy; Dieter Weichert

11:30-1:00 LUNCH BREAK

COMPOSITE MATERIAL MODELING
CHAIR: H. OKADA (Kagoshima University JAPAN)

paperID: 391 Start: 13:00 End: 13:30
KEYNOTE LECTURE: Particle Interface Imperfection Modeling for Composite
Huajian Chang; Michihiko Nakagaki

paperID: 337 Start: 13:30 End: 14:00
KEYNOTE LECTURE: Strength of Joint between Dissimilar Elastic Materials
Hidekazu Murakawa; Hisashi Serizawa; Kenji Miyamoto; Isamu Oda

paperID: 135 Start: 14:00 End: 14:20
Three-Dimensional Delamination Modeling Using a New Finite Element Formulation
Vassilios S Giannopoulos; Ali El-Zafrany

paperID: 338 Start: 14:20 End: 14:40
Nonuniform Torsion of Composite Bars of Variable Thickness
Sapountzakis J Evangelos; Mokos G. V.

paperID: 191 Start: 14:40 End: 15:00
Modeling of normal and high strength concrete columns
Jiri Nemecek; Zdenek Bittnar

3:00-3:20 AFTERNOON BREAK

COMPOSITE MATERIAL MODELING
CHAIR: M. NAKAGAKI (Kyushu Institute of Technology JAPAN)

paperID: 82 Start: 15:20 End: 15:50
KEYNOTE LECTURE: Computational Modeling and Evaluation of Microscopically Heterogeneous Deformation Behavior of Amorphous Polymer
Yoshihiro Tomita; Makoto Uchida

paperID: 193 Start: 15:50 End: 16:20
KEYNOTE LECTURE: Macro/Meso Mechanics Analyses for Composite Materials by using an Element Overlay Technique
Hiroshi Okada; Takashi Ninomiya; Sakasegawa Yosuke; Yasuyoshi Fukui; Noriyoshi Kumazawa

paperID: 74 Start: 16:20 End: 16:50
KEYNOTE LECTURE: Adaptive Multi-Scale Computational Modeling of Composite Materials
Ghosh Somnath

paperID: 564 Start: 16:50 End: 17:10
Optimization of Composite Laminated Plates by Means of a Meta Heuristic Algorithm
Jorge Oliveira Henriques; Luis Manuel Ferreira Roseiro; Luis Manuel Ferreira Roseiro; Rogerio Pereira Leal

paperID: 408 Start: 17:10 End: 17:30
Modeling and Simulation for Natural Plant Fiber Reinforced Composites with Variations in Geometrical and Material Properties
Kohji Suzuki; Kunio Funami; Isao Kimpara; Kazuro Kageyama

paperID: 197 Start: 17:30 End: 17:50
Thermal Properties of Graphite Foam: Experiments and Modeling
N. YU; C. C. Tee; H. Li

Session C

BOUNDARY ELEMENT METHODS
CHAIR: J.T. KATSIKADELIS (National Technical University of Athens GREECE)

paperID: 114 Start: 09:20 End: 09:50
KEYNOTE LECTURE: Multidimensional Numerical Integration for Meshless BEM
Yoshihiro Ochiai

paperID: 234 Start: 09:50 End: 10:20
KEYNOTE LECTURE: Local boundary integral equation method for heat conduction problem in an anisotropic medium
Jan Sladek; Vladimir Sladek

paperID: 106 Start: 10:20 End: 10:40
Conformal Mapping Method for Heat Conduction in Graded Materials
George D. Manolis; Richard P. Shaw; Christos G Panagiotopoulos; Konstantine P. Platsoukas

paperID: 108 Start: 10:40 End: 11:00
Dynamic effects of traffic loads on buried structures in layered soils
M'hammed Badaoui; Mounir Khaled Berrah

paperID: 118 Start: 11:00 End: 11:20
Numerical modelling of elastomers using the boundary element method.
Martin Thomas Bayliss; Ali El-Zafrany

11:30-1:00 LUNCH BREAK

BOUNDARY ELEMENT METHODS
CHAIR: J. SLADEK (Technical University of Bratislava SLOVAKIA)

paperID: 397 Start: 13:00 End: 13:30
KEYNOTE LECTURE: BEM solution of 3-D gradient elastic problems
K. G. Tsepoura; D. Polyzos; D. E. Beskos

paperID: 331 Start: 13:30 End: 13:50
Experimental Analysis of Bending Modes of an Aircraft Wing
Zoran Vulovic; Preetika Kumar

paperID: 314 Start: 13:50 End: 14:10
Performance of the BEM Solution in 3D Heat Conduction in the Frequency Domain
Nuno Simoes; Antonio Tadeu; Julieta António

paperID: 246 Start: 14:10 End: 14:30
BEM for Natural Convection in a Tall Porous Enclosures Saturated with a Power-law Fluid
Renata Jecl; Leopold Škerget

ICCES 03

paperID: 250 Start: 14:30 End: 14:50
A new BEM formulation for the analysis of two-dimensional infinite elastic media
Nickolaos K. Zafiropoulos; Christopher G. Provatidis

3:00-3:20 AFTERNOON BREAK

BOUNDARY ELEMENT METHODS
CHAIR: J.M.P. ANTONIO (University of Coimbra PORTUGAL)

paperID: 133 Start: 15:20 End: 15:50
KEYNOTE LECTURE: Application of Fast Multipole Boundary Element Method to Corrosion Analysis
Shigeru Aoki; Kenji Amaya; Masataka Urago; Atsushi Nakayama

paperID: 332 Start: 15:50 End: 16:10
The BEM For Dynamic Analysis Of Plates With Variable Thickness
John T. Katsikadelis; Aristophanes J. Yiotis

paperID: 287 Start: 16:10 End: 16:30
B Spline Fundamental Solutions and a Direct Time Domain BEM for 3-D Scalar Wave Propagation
Dimitris C Rizos; Saiying Zhou

paperID: 293 Start: 16:30 End: 16:50
The Domain Decomposition Method for Nonlinear Analysis of Elastic Space Membranes
George C. Tsiatas; John T. Katsikadelis

Session D

NUMERICAL SIMULATIONS IN SCIENCE & ENGINEERING
CHAIR: R. NAMBURU (Army Research Lab USA)

paperID: 76 Start: 09:20 End: 09:50
KEYNOTE LECTURE: Local and Global Shape Functions
H. Grundmann; K. Müller; S. Lenz

paperID: 251 Start: 09:50 End: 10:10
Spectral Analysis Method for Linear Dynamic Systems
Sunghwan Kim; Usik Lee

paperID: 309 Start: 10:10 End: 10:30
Structural Serviceability Vibration Criterion to Evaluate Floors Excited by Human Activities
Jose C. Andrade; Jose C. Andrade Filho; Carla F. Andrade; Clarissa F. Andrade

paperID: 301 Start: 10:30 End: 10:50
Design of Steel Structures by EC3 and Advanced Analysis
A. A. Vasilopoulos; D. E. Beskos

paperID: 124 Start: 10:50 End: 11:10
Simulation of Typical Road Surface Profiles Using a Pseudo-Random Approach
Mohammad Hossein Abolbashari; Moharram Shameli

11:30-1:00 LUNCH BREAK

COMPUTATIONAL MECHANICS FOR ELECTRONIC DEVICES & FLUID FLOW & HEAT TRANSFER
CHAIR: H. DJOJODIHARDJO (Bandung Institute of Technology JAPAN)

paperID: 275 Start: 13:00 End: 13:20
Designing and experimenting a package for optimizing the design of dc-squids
C. R. Calidonna; M. M. Furnari; S. Pagano; E. Sarnelli; G. Testa

paperID: 319 Start: 13:20 End: 13:40
Multiple cracking phenomenon of a thin film on a polymer substrate
Tomo Okabe; T. Toyoda; N. Takeda; M. Yanaka; K. Urabe

paperID: 413 Start: 13:40 End: 14:10
KEYNOTE LECTURE: Thermal Analysis and Management of Electronic Packages by Computational and Experimental Approaches
Wen-Hwa Chen; Hsien-Chie Cheng

paperID: 343 Start: 14:10 End: 14:40
KEYNOTE LECTURE: Transonic Flow Computation of Axi-Symmetric Bodies Using Slender Body Integral, Transonic Small Disturbance and Navier-Stokes Equations
Harijono Djojodihardjo; A. F. Widodo; E. Priyono; W. K. Sekar; C. Weishaupl; B. Laschka

paperID: 344 Start: 14:40 End: 15:00
Conformal Maping Method for Heat Conduction in Graded Materials
GD Manolis; RP State University Shaw; CG Panagiotopoulos; KP Platsoukas

3:00-3:20 AFTERNOON BREAK

FLUID FLOW & HEAT TRANSFER
CHAIR: D. POLYZOS (University of Patras GREECE)

paperID: 68 Start: 15:20 End: 15:50
KEYNOTE LECTURE: Recent Developments in the Theory and simulation of Small-scale, Non-continuum Gaseous Flows
Nicolas Hadjiconsantinou

paperID: 316 Start: 15:50 End: 16:10
Analysis of Heat Conduction in a Multilayer Floor Subjected to the Influence of Multiple Sources
Fernando G Branco; Nuno Simões; António Tadeu

paperID: 430 Start: 16:10 End: 16:30
Numerical Simulation of Free Boundary Viscous Flows at all Length Scales of LCM Process
Z Dimitrovová; S. G. Advani

paperID: 211 Start: 16:30 End: 16:50
Numerical Simulation of High-Enthalpy Nonequilibrium Flows with Shock Wave-Boundary Layer Interactions
Ioannis Nompelis; Graham V Candler

paperID: 409 Start: 16:50 End: 17:10
Adiabatic Heating and Thermal Activation in High Strain Rate Deformation of Steel
Kinya Ogawa

paperID: 15 Start: 17:10 End: 17:30
The Optimisation of the Pumping Installation's Working with Hydrophore
Aurora C Alexandrescu; Daniela L. Popescu

paperID: 208 Start: 17:30 End: 17:50
Rarified Flow through a Simple Aerodynamic Focusing System
C. Mehring; C.A. Herrera; S.N. Atluri

ICCES 03

Session E

DAMAGE TOLERANCE & AIRCRAFT STRUCTURAL INTEGRITY
CHAIR: K. SHIVAKUMAR (North Carolina A&T State University USA)

paperID: 101 Start: 09:20 End: 09:50
KEYNOTE LECTURE: Fracture Mechanics of Aircraft Fuselage Panel using BEM
Ferri M.S. Aliabadi

paperID: 201 Start: 09:50 End: 10:20
KEYNOTE LECTURE: Failure Behavior and Analysis of SCS-6/Ti-15-3 MMC Composite Bolted Joints
Som R. Soni; Hakan Kilic; Mike Camden; Mark M. Derriso

paperID: 260 Start: 10:20 End: 10:40
Small Crack Growth at Fastener Holes Under Variable Amplitude Loads
Arvind Nagar

paperID: 239 Start: 10:40 End: 11:00
The Use of Integrated Software Tools for Damage Tolerance Justification
Peter Carl Theodor Horst

paperID: 418 Start: 11:00 End: 11:20
Compliance Approach to Evaluate Strain Enegy Resealse Rate of Interfacial Crack of Two Dissimilar Media
Hisham Abdel-fattah; Sameer A Hamoush; Kunigal Shivakumar

paperID: 369 Start: 11:20 End: 11:40
Failure of Composite Laminates Embedded With Fiber Optic Sensor
Kunigal Shivakumar; Anil Bhargava; Legunchim Emmanwori

11:40-1:00 LUNCH BREAK

NUMERICAL SIMULATIONS IN SCIENCE & ENGINEERING
CHAIR: P. VASHISHTA (University of So. California USA)

paperID: 94 Start: 13:00 End: 13:30
KEYNOTE LECTURE: Computational Requirements in Modeling and Simulation of Solids and Structures to Blast and Projectile Penetration
Arunachalam M Rajendran

paperID: 75 Start: 13:30 End: 14:00
KEYNOTE LECTURE: A Mechanical Strain Energy Function for Graphene
Peter W Chung; Raju R. Namburu

paperID: 427 Start: 14:00 End: 14:20
A numerical-experimental integrated methodology to reduce the vibrations of the FIAT FIRE engine
Mario Bertolini; Guido La Rosa; Antonino Risitano; C. Grasso; Antonio Zappala'

paperID: 61 Start: 14:20 End: 14:40
Influence of the Turbine Generator Rotor Slot Wedges on the Unstable Vibrations
Marko Jokic; Milenko Stegic

3:00-3:20 AFTERNOON BREAK

NUMERICAL SIMULATIONS IN SCIENCE & ENGINEERING
CHAIR: P. VASHISHTA (University of So. California USA)

paperID: 574 Start: 15:20 End: 15:50
KEYNOTE LECTURE: Recent Advances in Coupling Eulerian-Lagrangian Methods for Weapon-Target Interaction
Raju Namburu

paperID: 326 Start: 15:50 End: 16:10
Molecular Dynamics Study on Hydrostatic Stress Effect on Crystal Nucleation Rate and Growth Velocity in Amorphous Metal
Ryosuke Matsumoto; Akihiro Nakatani; Hiroshi Kitagawa

paperID: 417 Start: 16:10 End: 16:30
Structural Analysis of the Stern Wings of Hydrofoil
Guido La Rosa; Giovanni Morabito; Antonino Risitano

ICCES 03

CHAIR: J.R. WILLIS (University of Cambridge UK)
paperID: 565 Start: 08:00 End: 09:00
PLENARY LECTURE - Mechanics: A Milestone and a Challenge
Jim. I. Chang (Army Research Office USA)

9-9:20 MORNING BREAK

Session A

STABILITY AND BIFURCATION
CHAIR: G.T. MICHALTSOS (Nat. Tech. Univ. of Athens GREECE)

paperID: 312 Start: 09:20 End: 09:40
A Computational Approach to the Seismic Interaction between Adjacent Buildings under Instabulizing Effects
A. A. Liolios; V. A. Profillidis

paperID: 395 Start: 09:40 End: 10:00
Dimensional Analysis of Yielding Structures
Nicos Makris; Cameron J. Black

paperID: 270 Start: 10:00 End: 10:20
Influence of initial imperfections for the design of buckling-prone structures
C. J. Gantes; M. Panagiotou; T. Fragkopoulos

paperID: 272 Start: 10:20 End: 10:40
Linear and non-linear Analysis of Cylindrical Shells. Evaluation of the methods applied
G.T. Michaltsos; J. M. Petalas; A. D. Sbarounis

paperID: 290 Start: 10:40 End: 11:00
Bending Instabilities of Pressurized Long Elastic Cylindrical Shells
S. Houliara; S. A. Karamanos

paperID: 200 Start: 11:00 End: 11:20
Delamination Buckling in Gradient Strain Elasticity
Konstantinos Anastasios Lazopoulos; Konstantinos Anastasios Lazopoulos

paperID: 161 Start: 11:20 End: 11:40
An Experimental Study on Ultimate Strength of Moment Resisting Steel Frames
Toishiki Ishizawa; Masashi Iura

11:40-1:00 LUNCH BREAK

SMART MATERIALS & ADAPTIVE STRUCTURES
CO-CHAIRS: A. CHATTOPADHYAY (Arizona State Univ. USA) & W.H. PROSSER (NASA Langley Research Center USA)

paperID: 422 Start: 13:00 End: 13:30
KEYNOTE LECTURE: Characterization of Delamination in using Damage Indices
Aditi Chattopadhyay; Cynthia Renee Swann; Heung Soo Kim; Yun Han

paperID: 303 Start: 13:30 End: 13:50
Mixed-Field Finite Element for the Nonlinear Effects of Large Deflections and Stress Stiffening on the Free Vibration of Adaptive Piezoelectric Plates
Dimitris Varelis; Dimitris A. Saravanos

paperID: 514 Start: 13:50 End: 14:10
Self-Assembled Free-Standing Materials and Devices
R Klaus; J. H. Lalli; B. Lepene; J. Huie; J. B. Mecham

paperID: 256 Start: 14:10 End: 14:30
FE-Formulation for Nonlinear Piezoelectric Material Behaviour in the Small Signal Range
Simone Mesecke-Rischmann; Rolf Lammering

paperID: 348 Start: 14:30 End: 14:50
Constitutive Modeling and Numerical Implementation of SMAs undergoing Cyclic Loading
Dimitris C. Lagoudas; Entchev B. Pavlin; Parikshith Kumar

paperID: 404 Start: 14:50 End: 15:10
An Extension of Continuum Mechanics to Carbon Nanotubes
Eun-Suok Oh; Dimitris C. Lagoudas; John C. Slattery

paperID: 401 Start: 15:10 End: 15:30
Experimental Studies on Ferromagnetic Shape Memory Alloys
Greg P. Carman; Eric Gans; Chris Henry

3:30-3:50 AFTERNOON BREAK

STRUCTURAL HEALTH MONITORING
CO-CHAIRS: A. CHATTOPADHYAY (Arizona State Univ. USA) & W.H. PROSSER (NASA Langley Research Center USA)

paperID: 149 Start: 15:50 End: 16:10
Structural Health Monitoring Sensor Development at NASA Langley Research Center
William H Prosser; Meng-Chou Wu; Sid G. Allison; Stan L DeHaven; Anindya Ghoshal

paperID: 162 Start: 16:10 End: 16:30
Robust H-2 Structural Control for Buildings
Daniela Marinova; Georgios E. Stavroulakis; Emmanuel C. Zacharenakis

paperID: 378 Start: 16:50 End: 17:10
Smart Sensors for Structural Health Monitoring
Darryll J. Pines

paperID: 438 Start: 17:10 End: 17:30
Automatic placement of distributed patch aktuators at smart lightweight structures
Ulrich Gabbert; Heinz Koeppe; Tamara Nestorovic

Session B

MULTISCALE MODELING OF NANOMATERIALS
CHAIR: V. TEWARY (Nat. Inst. of Standards and Tech. USA)

paperID: 205 Start: 09:20 End: 10:00
KEYNOTE LECTURE: Filling Carbon Nanotube with Biological Molecules: A Molecular Dynamics Study
Yong Kong; Daxiang Cui; Cengiz S Ozkan; Huajian Gao

paperID: 146 Start: 10:00 End: 10:30
Modeling Deformation and Fracture Processes at the Atomistic and Nano-scales
Diana Farkas; Antoine Latapie

paperID: 368 Start: 10:30 End: 11:00
Dynamic Stability of Composite Structures With Time-Dependent Nonuniform Membrane Loads
Andrzej Feliks Tylikowski; Andrzej Feliks Tylikowski

ICCES 03

paperID: 284 Start: 11:00 End: 11:30
Modeling of Materials based on First principles Methods
Ravi Pandey

11:30-1:00 LUNCH BREAK

MULTISCALE MODELING OF NANOMATERIALS
CHAIR: V. TEWARY (Nat. Inst. of Standards and Tech. USA)

paperID: 360 Start: 13:00 End: 13:40
KEYNOTE LECTURE: Multimillion Atom Molecular Dynamics Simulations of Nanostructures on Parallel Computers
Priya Vashishta; Rajiv K. Kalia; Aiichiro Nakano

paperID: 432 Start: 13:40 End: 14:20
KEYNOTE LECTURE: Modelling at the Appropriate Scale
A. H. Harker; A. M. Stoneham

paperID: 382 Start: 14:20 End: 14:50
Metastability and Non-Debye Relaxation Phenomena Due to Defect Clusters and Disorder in Semiconductors
Yashowanta N Mohapatra; Pravat K Giri; Samarendra P Singh

2:50-3:20 AFTERNOON BREAK

MULTISCALE MODELING OF NANOMATERIALS
CHAIR: V. TEWARY (Nat. Inst. of Standards and Tech. USA)

paperID: 73 Start: 15:20 End: 16:00
KEYNOTE LECTURE: Green's function method for multiscale modeling of nanostructures
Vinod Tewary

paperID: 218 Start: 16:00 End: 16:30
Materials Characterization by Diffraction: Experiment and Modeling
Davor Balzar

paperID: 177 Start: 16:30 End: 17:00
Visualization of Structure-Property Relationships: Spanning the Length Scales from Nano to Macro
Ronald Dean Kriz; Diana Farkas; Andrew A. Ray; John T. Kelso

paperID: 248 Start: 17:00 End: 17:30
Strain-Induced Energy Band Edge Shift in GaAs Quantum-Wire Structures
Ernian Pan

paperID: 103 Start: 17:30 End: 18:00
QWR Induced Elastic Strain and Electric Field on the Surface of Semiconductor Substrate GaAs
X. Jiang; X. Jiang; Ernian Pan; Ernian Pan

Session C

BOUNDARY ELEMENT METHODS & MESHLESS METHODS
CHAIR: C.S. Chen (University of Nevada Las Vegas USA)

paperID: 444 Start: 09:20 End: 09:40
Fast multipole method for the 3D transient scalar wave equation
Arturo di Gioia; Attilio Frangi; Giorgio Novati

paperID: 249 Start: 09:40 End: 10:00
Free vibrations of two-dimensional structures using Coons-patch macroelements, FEM and BEM
Christopher G. Provatidis

paperID: 398 Start: 10:00 End: 10:20
A BEM/2D-FFT Numerical Technique for Solving Wave Propagation Problems in Damaged Plates
V. Vavourakis; D. Polyzos

paperID: 137 Start: 10:20 End: 10:40
Stress Intensity Factor of a Large Crack by V-line Proportional Extrapolation Method Using Coarse Boundary Elements
Wataru Fujisaki; Isashi Hamamoto

paperID: 274 Start: 10:40 End: 11:00
hp-Clouds method and Generalized Finite ElementMethod: application to damage mechanics
Carlos Tiago; Vitor M. A. Leitão

paperID: 424 Start: 11:00 End: 11:30
KEYNOTE LECTURE: Density results on partial differential equations and the derivation of meshless methods
Carlos J.S. Alves

11:30-1:00 LUNCH BREAK

MESHLESS METHODS
CHAIR: I.S. RAJU (NASA Langley Research Center USA)

paperID: 111 Start: 13:00 End: 13:30
KEYNOTE LECTURE: Fast Solution of the Method of Fundamental Solutions for Modified Helmholtz Equation
B. Sarler; C. S. Chen; C.H. Ho; D.L. Young

paperID: 170 Start: 13:30 End: 14:00
KEYNOTE LECTURE: A Cubic Radial Basis Function in the MLPG Method for Beam Problems
Ivatury S Raju; Dawn R Phillips

paperID: 160 Start: 14:00 End: 14:20
The Method of Fundamental Solutions for Solving the Axisymmetric Poisson Equation
Angel S. Muleshkov; Michael A. Golberg; C.S. Chen

paperID: 165 Start: 14:20 End: 14:40
Assessing the influence of material stiffness on the low-frequency sound transmission between two contiguous tunnels, via Boundary Element Method
Paulo F. A. Santos; António J. B. Tadeu

3:00-3:20 AFTERNOON BREAK

MESHLESS METHODS
CHAIR: H. GRUNDMANN (Technische Universitat Munchen GERMANY)

paperID: 85 Start: 15:20 End: 15:50
KEYNOTE LECTURE: A meshless level set approach to interface capturing
Lan Mai-Cao; Thanh Tran-Cong

paperID: 393 Start: 15:50 End: 16:10
Computation of particular solutions by hyperinterpolation and fast Fourier transform
Xin Li; C.S. Chen; Michael A Golberg

paperID: 396 Start: 16:10 End: 16:30
A Meshless Local Boundary Integral Equation Method for Solving Transient Elastodynamic Problems
E. J. Sellountos; D. Polyzos

paperID: 351 Start: 16:30 End: 16:50
Modelling Free Surface Flows by a Galerkin based SPH formulation
Luis Cueto-Felgueroso; Ignasi Colominas; Gonzalo Mosqueira; Fermin Navarrina; Manuel Casteleiro

Session D

ANALYTICAL METHODS FOR PROPULSION
CHAIRS: D.R. REDDY & M. RAJU (NASA Glenn Research Center USA)

paperID: 352 Start: 09:20 End: 09:50
KEYNOTE LECTURE: Analysis of 3-D Braided Composite Rocket Nozzle
Kunigal Shivakumar; Aaron A Cozart

paperID: 419 Start: 09:50 End: 10:10
Turbulence Models for Gas Turbine Engine Flow Applications
Dhanireddy R Reddy; T H Shih

paperID: 178 Start: 10:10 End: 10:30
Re-Circulation Method for Mixing and Heat Transfer Enhancement: Theory and Experiment
Mikhail Gilinsky; Isaiah M Blankson; Veniamiv I Maron; Morris H Morgan; Ates Akyurtlu; Charles A Hill

paperID: 350 Start: 10:30 End: 10:50
Theoretical Investigation of High-Power Electromagnetic Propulsion System
Pavlos G. Mikellides

paperID: 134 Start: 10:50 End: 11:10
An Overview of The Overall Spray Solution Procedure Developed Under NCC (National Combustion Code)
Manthena S. Raju

paperID: 336 Start: 11:10 End: 11:30
A Numerical Investigation on Aerodynamic Property and Heat Transfer Enhancement for Surfaces with Concave Cavities
Geo W Lee; Frederick Ferguson; Suresh Chandra; Endwell Daso

11:30-1:00 LUNCH BREAK

INELASTIC DEFORMATION AND VIBRATIONS
CHAIR: V. LEITAO (Instituto Superior Tecnico PORTUGAL)

paperID: 300 Start: 13:00 End: 13:20
Seismic inelastic response of steel frames by spectrum analysis with equivalent damping
G. A. Papagiannopoulos; V. A. Asimakopoulos; D. E. Beskos

paperID: 217 Start: 13:20 End: 13:40
Resonance Characteristics of Synthetic Jet Actuators
Nail K. Yamaleev; Mark H. Carpenter; Frederick Ferguson; Suresh Chandra

paperID: 373 Start: 13:40 End: 14:00
An investigation of Adaptive Mesh Refinement during Parametric Study of the Deep Drawing Operations
Mohd Ahmed; S. G. Sekhon; Devender Singh

paperID: 190 Start: 14:00 End: 14:20
Life Analysis of a fcc Single Crystal and Simulation of Crack Propagation by Blunting and Re-Sharpening
Vladislav Levkovitch; Rainer Sievert; Bob Svendsen

paperID: 363 Start: 14:20 End: 14:40
Displacement Recovery based h-adaptive analysis of deep drawing operations
mohd ahmed mohd; G. S. G. S. Sehkon; Devendra Singh Singh

paperID: 339 Start: 14:40 End: 15:00
Natural Frequencies of Plane Sway Frames: An Overview of Two Simple Models
Behzad Rafezy; William P. Howson

3:00-3:30 AFTERNOON BREAK

MULTIPHYSICS & MULTIBODY DYNAMICS
CHAIR: W. SCHIEHLEN (University of Stuttgart GERMANY)

paperID: 387 Start: 15:20 End: 15:40
Vibration Analysis of Automotive Body Panel with Viscoelastic Body
Yoshio Kurosawa; hideki enomoto; Takao Yamaguchi; Shuji Matsumura

paperID: 92 Start: 15:40 End: 16:10
KEYNOTE LECTURE: Multi-scale Dynamics of Multibody Systems with Impacts
Werner Schiehlen;; Robert Seifried

paperID: 107 Start: 16:10 End: 16:30
Cell Automaton Restructuring Approaches on Heterogeneous Microsolidification by the Lorentz Excitation in Vessel Casting
Toshio Tsuta; Takeshi Iwamoto; Bunko Wang

paperID: 157 Start: 16:30 End: 16:50
An Expression For Predicting The Probability Of Impact Angles For A Tumbling Polyhedron
Daniel J Vavrick

Session E

FLUID FLOW & HEAT TRANSFER
CHAIR: N.G. HADJICONSTANTINOU (Massachusetts Institute of Technology USA)

paperID: 278 Start: 09:20 End: 09:40
Numerical Model for Studies on Microscale Laminar Nusselt Number
Aristotel Popescu

paperID: 232 Start: 09:40 End: 10:00
Evaluation of the Air Velocity Effect on the Thermodynamic Optimization of Air Conditioning Rotary Dehumidifier
Ema Panaite

paperID: 231 Start: 10:00 End: 10:20
The Use of Slotted Blades with Application to Fans
Daniela Popescu; Th Popescu

paperID: 204 Start: 10:20 End: 10:40
Unstructured Grid Solver for the Convection-Diffusion Equation
Zdravko Virag; Ivo Dzijan; Mario Savar

paperID: 164 Start: 10:40 End: 11:00
Test Section for Subsonic Wind Tunnels
Daniela L. Popescu; Theodor Th. Popescu; Aurora C. Alexandrescu

paperID: 141 Start: 11:00 End: 11:20
Inward Solidification in Cylindrical Tubes
Bogdan Horbaniuc; Gheorghe Dumitrascu; Aristotel Popescu

ICCES 03

11:30-1:00 LUNCH BREAK

NUMERICAL METHODS & FLUID FLOW & HEAT TRANSFER
CHAIR: C. HERRERA (University of California Irvine, USA)

paperID: 116 Start: 13:00 End: 13:30
KEYNOTE LECTURE: A Summary of Recent and Current Work on Development of Transcendental Eigensolvers and their Applications
Fred Williams; W P Howson; D Kennedy; A Watson

paperID: 120 Start: 13:30 End: 13:50
Numerical Computation of Flow around an Artificial Marine Structure for Generating an Upwelling in the Bay
Shigeaki Shiotani

paperID: 104 Start: 13:50 End: 14:10
Investigation of the shock-wave interaction in metal powders
A E. Buzyurkin; S. P. Kiselev

paperID: 279 Start: 14:10 End: 14:30
About A Cellular Vortex Flow Visualisation
Aristotel Popescu

paperID: 127 Start: 14:30 End: 14:50
Steady And Unsteady Flow Study In A Tube Stenosis
Demetri Mathioulakis

paperID: 142 Start: 14:50 End: 15:10
Two-Dimensional Solidification in A Square-Shaped Domain
Bogdan Horbaniuc; Gheorghe Dumitrascu; Aristotel Popescu

3:10-3:30 AFTERNOON BREAK

FLUID-STRUCTURE INTERACTIONS
CHAIR: D.A. SARAVANOS (University of Patras GREECE)

paperID: 125 Start: 15:30 End: 15:50
Modification of an Engine Air Intake System
Mohammad Reza Mahpeykar; Mohammad Hossein Abolbashari

paperID: 110 Start: 15:50 End: 16:10
A numerical method to study blood flows interacting with elastic vessel wall
Yohsuke Imai; Takayuki Aoki; Hiroo Ikehira

paperID: 259 Start: 16:10 End: 16:30
Analytical Approach To Cell Geometry Description
Peter Dabnichki; Angel Zhivkov

paperID: 257 Start: 16:30 End: 16:50
Vibration of a poroelastic Mindlin plate
Martin Schanz; Anke Busse

paperID: 237 Start: 16:50 End: 17:10
Proposal and Implementation of a Fluid-Structure Coupled Simulation System with Parallel Commercial Codes
Zhihong Guo; Osamu Hazama; Mitsuru Yamagiwa; Toshio Hirayama; Teruo Matsuzawa

ICCES 03

CHAIR: P. TONG (Hong Kong University of Science & Technology PR CHINA)

paperID: 567 Start: 08:00 End: 09:00
PLENARY LECTURE - The Meshless Local Petrov Galerkin (MLPG) Method for Domain & Boundary Discretizations at Various Length Scales
S.N. ATLURI (University of California Irvine USA)

9-9:20 MORNING BREAK

Session A
ANALYTICAL AND EXPERIMENTAL METHODS IN EARTHQUAKE STRUCTURAL ENGINEERING
CHAIR: A. KAPPOS (Aristotle Univ. of Thessaloniki GREECE)

paperID: 54 Start: 09:20 End: 09:50
KEYNOTE LECTURE: Reliability in Numerical Simulations for Earthquakes and Volcanic Eruptions Caused by Plate Tectonics
Teruo MIYAZAKI

paperID: 174 Start: 09:50 End: 10:10
Seismic response analysis of concrete discontinuous structures - Part 1: Presentation of the method
Athanasios D. Tzamtzis; Panagiotis G. Asteris; Panagiotis Vouthounis; Ploutarhos Kerpelis

paperID: 176 Start: 10:10 End: 10:30
Seismic response analysis of concrete discontinuous structures - Part 2: Application to gravity dams
Athanasios D. Tzamtzis; Panagiotis G. Asteris; Panagiotis Vouthounis; Ploutarhos Kerpelis

paperID: 216 Start: 10:30 End: 10:50
Simplified SSI Analysis of Rigid Foundations Using a System Identification Approach
Dimitris C Rizos; Edward H Stehmeyer

paperID: 271 Start: 10:50 End: 11:10
A Non-linear Model for Pushover and Dynamic Analysis of Masonry Buildings
Sergio Lagomarsino; Andrea Penna

paperID: 305 Start: 11:10 End: 11:30
Inelastic static analysis of infilled R/C buildings
A J Kappos; C G Panagiotopoulos

11:30-1:00 LUNCH BREAK

ANALYTICAL AND EXPERIMENTAL METHODS IN EARTHQUAKE STRUCTURAL ENGINEERING
CHAIR: A. KAPPOS (Aristotle University of Thessaloniki GREECE)

paperID: 333 Start: 13:00 End: 13:30
KEYNOTE LECTURE: Seismic Assessment of a Major Bridge using Pushover Analysis
A J Kappos; A G Sextos; P Mergos

paperID: 341 Start: 13:30 End: 13:50
Mixed Finite Element Analysis of Steel Stiffened Elastomeric Bearings
P. Kakavas; N. Kyriakopoulos; N. Anifantis

paperID: 425 Start: 13:50 End: 14:10
Seismic Behaviour of Dual Systems - new design-oriented approaches
Rita Bento; Mário Lopes

paperID: 416 Start: 14:10 End: 14:30
A New Seismic Design Method for Building Framed Structures
N. Bazeos; D. E. Beskos

paperID: 384 Start: 14:30 End: 14:50
Improper Convergence in Time Integration of Dynamic Systems involving Friction
Aram Soroushian; Jamshid Farjoodi

paperID: 325 Start: 14:50 End: 15:10
Seismic Repair of Exterior R/C Beam-to-Column Subassemblages using Two-Sided and Three-Sided Jackets
Alexandros Tsonos; Alexandros Tsonos

3:10-3:30 AFTERNOON BREAK

COMPUTATIONAL STRUCTURAL MECHANICS & HIGH-PERFORMANCE COMPUTING
CHAIR: A.M. RAJENDRAN (ARMY Research Office USA)

paperID: 443 Start: 15:30 End: 16:00
KEYNOTE LECTURE: Eigenvector-Free Procedures in Computational Bifurcation Analysis
Fumio Fujii; Hirohisa Noguchi

paperID: 340 Start: 16:00 End: 16:20
An Overview of Member Stiffness Determinants for Prismatic Plate Assemblies
Abdolreza Zare; William P. Howson; David Kennedy

paperID: 380 Start: 16:20 End: 16:40
DP-FETI on heterogeneous cluster
Jaroslav Kruis; Zdenek Bittnar

paperID: 392 Start: 16:40 End: 17:00
A new accurate yet simple plate bending element with linear bending strains
Lars Damkilde; Peter Noe Poulsen

paperID: 515 Start: 17:00 End: 17:20
Alternative Bending Strain Measure for Shells with Drilling Degrees of Freedom
Yoshitaka Suetake; Masashi Iura; Satya N. Atluri

Session B

COMPUTATIONAL AND EXPERIMENTAL MATERIAL CHARACTERIZATION TECHNIQUES FOR PAVEMENT ENGINEERING
CHAIR: J. BLAAUWENDRAAD (Delft Univ. of Tech. NETHERLANDS)

paperID: 198 Start: 09:20 End: 09:50
KEYNOTE LECTURE: Development of an Elasto-Visco-Plastic Constitutive Model for Asphalt
Andrew C Collop; A (Tom) Scarpas; Cor Kasbergen; Arian de Bondt

ICCES 03

paperID: 219 Start: 09:50 End: 10:20
KEYNOTE LECTURE: Multiscaling Techniques for Modeling Damage Evolution in Asphaltic Pavements
David H Allen; Chad R Searcy; Jorge B Soares; Jorge B Soares; Jorge B Soares

paperID: 153 Start: 10:20 End: 10:40
Simple shear testing of asphalt concrete
Jacob Uzan

paperID: 209 Start: 10:40 End: 11:00
Revisit Dilatancy and Failure of Sand in Rountine Triaxial Compression, PartI Experimentation and Modeling
Xiaohui Cheng; Frans B.J. Barends

paperID: 210 Start: 11:00 End: 11:20
Revisit Dilatancy and Faliure of Sand in Routine Triaxial Compression, PartII, Limit Analysis on Failure Mechanism
Xiaohui Cheng; Frans B.J. Barends

paperID: 212 Start: 11:20 End: 11:40
Repeated Load Creep Test Predictions Using the Theory of Linear Viscoelasticity
Flávio Vasconcelos Souza; Jorge Barbosa Soares; David H. Allen

11:40-1:00 LUNCH BREAK

COMPUTATIONAL AND EXPERIMENTAL MATERIAL CHARACTERIZATION TECHNIQUES FOR PAVEMENT ENGINEERING
CHAIR: A. LIOZOS (Nat. Tech. Univ. of Athens GREECE)

paperID: 258 Start: 13:00 End: 13:20
A New Numerical Model for Asphalt Pavements
Bernd Moeller; Markus Oeser

paperID: 307 Start: 13:20 End: 13:40
Development of a 3D-FEM for Surfacings on Steel Deck Bridges
M. Huurman; T. O. Medani; A. Scarpas; C. Kasbergen

paperID: 313 Start: 13:40 End: 14:00
Experimental Determination of Dynamic Plasticity Model Parameters for Asphalt Mixtures
Gordon Dan Airey; Andrew Charles Collop; Stuart Thomas Dunhill; Tom Scarpas

paperID: 322 Start: 14:00 End: 14:20
Analysis of Airfield Pavement Maintenance Options
Wouter T. van Bijsterveld; Arian H. de Bondt

paperID: 334 Start: 14:20 End: 14:40
Comparison of Mechanistic Fatigue Prediction Methods for Asphalt Pavements
Karim Chatti; Hyungsuk Lee

paperID: 306 Start: 14:40 End: 15:00
Development of a Structural FEM for Road Surfacing Seals
M. Huurman; T. I. Milne; M. F.C. van de Ven; A. Scarpas

3:00-3:20 AFTERNOON BREAK

COMPUTATIONAL AND EXPERIMENTAL MATERIAL CHARACTERIZATION TECHNIQUES FOR PAVEMENT ENGINEERING
CHAIR: A. COLLOP (University of Nottingham UK) & A. SCARPAS (Delft University of Technology NETHERLANDS)

paperID: 335 Start: 15:20 End: 15:40
Pavement Soil Characterization Using a Dynamic Stiffness Model
Andreas Loizos

paperID: 285 Start: 15:40 End: 16:00
Experimental Verification of Microstructure-Based Continuum Model Using ALF Data
Eyad A Masad; Laith Tashman; H Zbib; Dallas Little; Thomas Harman

paperID: 375 Start: 16:00 End: 16:20
3D Finite Element Analysis of Pavement Constructed on Cement Strabilized Soil-Wall
X. Liu; Y. Zhao; A. Bondt de; C. Kasbergen; A.(Tom) Scarpas

paperID: 390 Start: 16:20 End: 16:40
Viscoelastoplastic Continuum Damage Modeling of Asphalt Concrete in Tension
Richard Youngsoo Kim; Ghassan R. Chehab

paperID: 402 Start: 16:40 End: 17:00
Utilizing Stress Ratios in the Structural Analysis of Pavements with Foam Treated Materials using Finite Element Analysis Techniques
Steph J Bredenhann; Kim J Jenkins

paperID: 405 Start: 17:00 End: 17:20
The effect of strain rate on asphaltic concrete response
X. Liu; S. M.J.G. Erkens; A.(Tom) Scarpas; J. Blaauwendraad

paperID: 437 Start: 17:20 End: 17:40
Asphalt concrete Rutting Response: A matter of dimensions?
Sandra Erkens; Arthur Dommelen, van; Jan Voskuilen

paperID: 286 Start: 17:40 End: 18:00
The measurements of the bridge dynamical characteristics and road surface profiles
Andrej Strukelj; Gorazd Lipnik; Mirko Psunder; Ljuba Vilar Strukelj

Session C

COMPUTATIONAL INTELLIGENCE AND ADVANCED INFORMATION TECHNOLOGIES IN ENGINEERING SCIENCE
CHAIR: D. LAGOUDAS (Texas A&M University USA)

paperID: 115 Start: 09:20 End: 09:40
Verification of Multicast Protocol using UPPAAL
Jagannath V Aghav; Prasanna Kulkarni

paperID: 181 Start: 09:40 End: 10:00
ROADS: Role-based Authorization and Delegation System
Rudrapatna K Shyamasundar; Viswas Patil

paperID: 186 Start: 10:00 End: 10:20
A Secure E-Auction System
Rudrapatna K Shyamasundar; V S Borkar; Mehul S Dave

paperID: 194 Start: 10:20 End: 10:40
Statistically Optimized Periodic Unit Cells as Representatives of Random Microstructures
Jan Zeman; Michal Sejnoha

ICCES 03

paperID: 282 Start: 10:40 End: 11:00
Optimal dynamic system identification, based on Genetic Programming
Iztok Ciglaric; Aleksander Kidrič

paperID: 364 Start: 11:00 End: 11:20
Microplane material model parameters identification by genetic algorithm-based method
Anna Kucerova; Matej Leps; Zdenek Bittnar

paperID: 388 Start: 11:20 End: 11:40
Simulation of Quantum Computers Solving Physics
Ronald E Meyers; Keith S Deacon

11:40-1:00 LUNCH BREAK

MULTISCALE SIMULATIONS: MECHANICS OF MATERIALS FROM THE NANO- TO THE MESO- SCALE
CHAIR: H. GEORGIADIS (Nat. Tech. Univ. of GREECE)

paperID: 513 Start: 13:00 End: 13:30
KEYNOTE LECTURE: Critical Measurements for the Validation of Computational Multiscale Modeling
Fu-pen Chang

paperID: 277 Start: 13:30 End: 13:50
Experimental Device for Studies on Macroscale to Microscale Transition of Thermal Phenomena
Aristotel Popescu; James R Welty; David M Pfund; Ovidiu Virgil Stadoleanu; Haralambie M Vartolomei

paperID: 400 Start: 13:50 End: 14:10
Interfacial Interactions in Polycrystalline Aggregates
W. M. Ashmawi; M. A. Zikry

paperID: 158 Start: 14:10 End: 14:30
Molecular dynamic simulation of the detonation processes in a three-dimensional molecular crystal
Andrey V Utkin; Vasilii M Fomin; Igor F Golovnev

3:00-3:30 AFTERNOON BREAK

MULTISCALE SIMULATIONS: MECHANICS OF MATERIALS FROM THE NANO- TO THE MESO- SCALE
CHAIR: F.P. CHIANG (University at Stonybrook USA)

paperID: 147 Start: 15:30 End: 16:00
KEYNOTE LECTURE: Computer-aided Surface Patterning at the Nanoscale
Hanchen Huang; Jian Wang

paperID: 247 Start: 16:00 End: 16:20
Stress Concentration at the Surface of Fatigued Materials: A Discrete Dislocation Dynamics Study
Steffen Brinckmann; Erik Van der Giessen

paperID: 195 Start: 16:20 End: 16:40
Multiscale Modeling of Particle-Substrate Interactions in Metallic Materials
Edward H Glaessgen; Dawn R Phillips; Erin Iesulauro; Erik Saether; Robert S Piascik

paperID: 563 Start: 16:40 End: 17:00
KEYNOTE LECTURE: Velocity Gap in Silicon
Michael P Marder; Michael P Marder; Robert Deegan; Harry L Swinney

Session D

DAMAGE AND FRACTURE MECHANICS
CHAIR: E.C. AIFANTIS (Aristotle University of Thessaloniki GREECE)

paperID: 88 Start: 09:20 End: 09:50
KEYNOTE LECTURE: Dimple Fracture Simulation Under Different Constraint Conditions
Masanori Kikuchi

paperID: 78 Start: 09:50 End: 10:20
KEYNOTE LECTURE: Extended Finite Element Method for Direct Evaluation of Mixed Mode Stress Intensity Factors in Bimaterials
B. L. Karihaloo

paperID: 60 Start: 10:20 End: 10:40
Elastoplastic fracture analysis of through-wall cracked cylindrical shells
Zdenko Tonkovic; Jurica Soric; Ivica Skozrit

paperID: 130 Start: 10:40 End: 11:00
Direct Observation of Interfacial Fracture and Interface Crack Growth in Ceramic Composites
R. Singh

paperID: 131 Start: 11:00 End: 11:10
Fracture Mechanism of Cemented Carbide Tips Held in Bits for Excavation: 1st Report, Effect of Tip Shapes on Mechanism and Modes of Fracture
Shingo Okamoto; Akio Okamoto

paperID: 132 Start: 11:10 End: 11:20
Fracture Mechanism of Cemented Carbide Tips Held in Bits for Excavation: 2nd Report, Mechanical Properties of WC-Co Cemented Carbide
Shingo Okamoto; Akio Okamoto; Shuzo Fujii

11:30-1:00 LUNCH BREAK

DAMAGE AND FRACTURE MECHANICS
CHAIR: M. KIKUCHI (Science University of Tokyo JAPAN)

paperID: 87 Start: 13:00 End: 13:30
KEYNOTE LECTURE: Fundamental issues in dislocation dynamics
Xanthippi Markenscoff

paperID: 144 Start: 13:30 End: 13:50
Investigation of Transverse Cracks Initiation in Continuous Steel Casting Using a Finite Element Approach
Sylvie Castagne; Anne Marie Habraken

paperID: 138 Start: 13:50 End: 14:10
Stress Analysis inside the Specimen under Mixed-Mode Loading by Three-Dimensional Hybrid Method
Kenji Machida

paperID: 185 Start: 14:10 End: 14:30
Distribution of Stresses in the Vicinity of Straight Crack Front with Present Materials Dissimilarity
Drazan Kozak; Nenad Gubeljak; Franjo Matejicek; Maks Oblak

paperID: 379 Start: 14:30 End: 14:50
Static Analysis pf Masonry Bridges by a Nonlinear 3-D FEM
Panagiotis G Nikolaou; Manolis G Sfakianakis; George D Hatzigeorgiou; Dimitri E Beskos

paperID: 225 Start: 14:50 End: 15:10
Geometrically Nonlinear Analysis on Wrinkling Phenomena of a Circular Membrane
Takashi Iwasa; M C Natori; Hirohisa Noguchi; Ken Higuchi

3:10-3:30 AFTERNOON BREAK

DAMAGE AND FRACTURE MECHANICS
CHAIR: X. MARKENSCOFF (University of California San Diego USA)

paperID: 273 Start: 15:30 End: 15:50
Finite Element Modelling of Ultrasound Propagation in Long Bones during Fracture Healing
Vasilios Protopappas; Iraklis Kourtis; Lampros Kourtis; Dimitrios Fotiadis; Christos Massalas

paperID: 192 Start: 15:50 End: 16:10
S-N Fatigue Life Calculation of a Truck Cab Suspension Component
Murat Ereke

paperID: 263 Start: 16:10 End: 16:30
Advances in the application of non-local damage and failure modelling with the Gurson model
Frederik Reusch

paperID: 298 Start: 16:30 End: 16:50
On the crack arrest in stochastically inhomogeneous materials
Natalia B. Romalis

paperID: 99 Start: 16:50 End: 17:10
Transient crack problem of a functionally graded smart structure under electromechanical impact loading
Ai Kah Soh; Jian Chen; Jinxi Liu

paperID: 213 Start: 17:10 End: 17:30
Simulation of Crack Propagation in Concrete Using a Lattice Model for the Mesostructure
Tai Kang Wang; Tulio Nogueira Bittencourt

Session E

FRONTIERS IN RESEARCH AT THE UNIVERSITY OF CALIFORNIA IRVINE
CHAIR: J. HOLSTEIN (University of California Irvine USA)

paperID: 317 Start: 09:20 End: 09:40
Transport of Colloids in Fractures with Spatially Variable Aperture
Constantinos V. Chrysikopoulos; Scott C. James

paperID: 403 Start: 09:40 End: 10:00
Diversity Characterization of a Wideband Multi-element Antenna for Indoor Wireless Communication
Bedri Cetiner; J.Y. Qian; Luis Jofre; G.P. Li; Franco De Flaviis

paperID: 222 Start: 10:00 End: 10:20
Recent Progress in Space-time Coding
Hamid Jafarkhani

paperID: 421 Start: 10:20 End: 10:40
High Performance Viterbi Decoder for IEEE 802.11a Systems
Ender Ayanoglu; Enis Akay

paperID: 439 Start: 10:40 End: 11:00
Electromagnetically Metamorphic Elements: Scatterers, Antennas, Materials
Nicolaos G. Alexopoulos

paperID: 511 Start: 11:00 End: 11:20
Micro/Nano Technology: A Solution for Next Generation Multi-function Integrated Systems
GP Li

paperID: 412 Start: 11:20 End: 11:40
Integrated Microfluidics for Nanoscale Synthesis and Self Assembly for Biomedical Applications
Abraham P Lee; Yung-Chieh Tan; John Collins

11:40-1:00 LUNCH BREAK

AGING AIRCRAFT
CHAIR: T. KERMANDIS (University of Patras GREECE)

paperID: 327 Start: 13:00 End: 13:30
KEYNOTE LECTURE: Effects of Corrosion & Corrosion Induced Hydrogen Embrittlement on the Integrity of Ageing Aircraft Components
Th. B. Kermanidis

paperID: 238 Start: 13:30 End: 13:50
Aging Aircraft
Peter Carl Theodor Horst

paperID: 365 Start: 13:50 End: 14:10
Adaptive Analysis of Materials with Strain Softening
Zdenek Bittnar; Borek Patzak; Daniel Rypl

paperID: 328 Start: 14:10 End: 14:30
Effects of Corrosion on the Local Fracture Toughness of 2024 Aluminum Alloy
Al. Th. Kermanidis; Sp. G. Pantelakis

paperID: 415 Start: 14:30 End: 14:50
Hydrogen uptake during exfoliation corrosion of Al-alloys: The extet of hydrogen affected zone
Helen M. Kamoutsi; Vasilis Bontozoglou; Gregory N. Haidemenopoulos

paperID: 431 Start: 14:50 End: 15:10
Aircraft and Helicopter Structural Integrity under Extreme Loads
C. M. Kindervater

3:10-3:30 AFTERNOON BREAK

FRACTURE SIMULATIONS & AEROACOUSTIC REDUCTION FACTORS
CHAIR: D. POLYZOS (Univ.ersity of Patras GREECE)

paperID: 353 Start: 15:30 End: 16:00
KEYNOTE LECTURE: Notched Strength of Fiber Reinforced Composite Laminates: Experiments and Analyses
Anthony M Waas

ICCES 03

paperID: 155 Start: 16:00 End: 16:30
KEYNOTE LECTURE: Ductile Crack Growth in Sheet Metals: Global and Local Modeling Approaches
Wolfgang Brocks

paperID: 383 Start: 16:30 End: 16:50
Balancing Domain Decomposition Method in Shell Analyses
Shohei Horiuchi; Hirohisa Noguchi

paperID: 385 Start: 16:50 End: 17:10
Best sensors position for accurate location of acoustic emission sources on cylindrical surfaces
Efstratios Michael Lympertos; Evangelos Spyros Dermatas

Session F

DAMAGE TOLERANCE & AIRCRAFT STRUCTURAL INTEGRITY
CHAIR: P. TAN (FAA Howard J. Hughes Tech. Center USA)

paperID: 97 Start: 09:20 End: 09:50
KEYNOTE LECTURE: Damage Tolerance Methodologies for Next Generation Aircraft
P. E. O'Donoghue; J. Ju

paperID: 399 Start: 9:50 End: 10:10
Life Assessment of a Jet Engine Component
E. Acar; M. A. Akgün

paperID: 221 Start: 10:10 End: 10:30
Damage Tolerance of Integral Structure in Rotorcraft
Scott C Forth; Michael R Urban

paperID: 367 Start: 10:30 End: 10:50
Advanced processing of primary interferometric data for estimation of whole fields of mechanical vibration amplitudes
Dan Borza

paperID: 573 Start: 10:50 End: 11:10
A Probabilistic Based Damage Tolerance Assessment of Airframe Components
M. C. Escobedo Medina; D. D. Cioclov; H. J. Schmidt

paperID: 172 Start: 11:10 End: 11:30
The Application of Damage Tolerant Design and Fracture Mechanics in Helicopters
Brian H. Perrett

11:30-1:00 LUNCH BREAK

DAMAGE TOLERANCE & AIRCRAFT STRUCTURAL INTEGRITY
CHAIR: P. TAN (FAA Howard J. Hughes Tech. Center USA)

paperID: 578 Start: 13:00 End: 13:20
Geometrically Nonlinear Analysis of Lap Joints using a Transverse Stress Recovery Technique
Gregory Clarke; Keejoo Lee; Sung W. Lee

paperID: 262 Start: 13:20 End: 13:40
Impact of Parameter Variation on Damage Tolerance Analysis Estimates
David H Wieland; Harry Milwater; Arvind Nagar

paperID: 358 Start: 13:40 End: 14:00
Prediction of fatigue crack growth rates for damage tolerant helicopter design- the role of load spectrum and material
Philip E Irving; Vasilios Zitounis; Richard G Buller

paperID: 171 Start: 14:00 End: 14:20
The Development of Test Criteria to Improve the Burnthrough Resistance of an Aircraft Fuselage Against a Postcrash Fuel Fire
Tim Marker; Gus P Sarkos

3:00-3:30 AFTERNOON BREAK

ICCES 03

Session A FRACTURE MECHANICS
CHAIR: S. GHOSH (OHIO State University USA)

paperID: 55 Start: 08:00 End: 08:30
KEYNOTE LECTURE: Thermoviscoplasticity of Shape Memory Materials: Experimental Facts and Constitutive Modeling
Haupt P

paperID: 389 Start: 08:30 End: 08:50
Elastic-plastic Simulation of a Plate with a Thin Defect Subjected to Uni-axial Tension
S. Ohtaki; T. Yamamoto

paperID: 433 Start: 08:50 End: 09:10
Fracture Path Predictions using Numerical Simulations for Dynamic Thermo Elasto Visco Plastic Fracture
Takehiro Fujimoto; Toshihisa Nishioka

paperID: 434 Start: 09:10 End: 09:30
Moving Finite Element Method for Fracture Path Prediction in Materials Containing Inclusions and Voids
Toshihisa Nishioka; Kengo Kishimoto; Takehiro Fujimoto

paperID: 436 Start: 09:30 End: 09:50
The Numerical Analysis of Crack Propagation Phenomenon Accompanied by the Acceleration and Deceleration using the Moving FiniteElement Method based on Delaunay Automatic Triangulation
Toshihisa Nishioka; Hiroyuki Furuta; Takehiro Fujimoto

paperID: 435 Start: 09:50 End: 10:10
Development of Numerical Simulation Technique on Kinking Fracture from Interfacial Cracks
Toshihisa Nishioka; Nukasaka Takeshi; Takehiro Fujimoto

11:30-1:00 LUNCH BREAK

Session B

NUMERICAL METHODS
CHAIR: T. TRAN-CONG (University of Southern Queensland AUSTRALIA)

paperID: 428 Start: 08:00 End: 08:30
KEYNOTE LECTURE: On the Versatility of Meshless Kernel Methods
Robert Schaback

paperID: 321 Start: 08:30 End: 08:50
A Mesh-free Approach to Axisymmetric Diffusion Problems
Igor Kovacevic; Bozidar Sarler

paperID: 235 Start: 08:50 End: 09:10
Modelling The Work Thrust Caracteristic
Virgil Stanciu; Vasile Bendic; Evelina Rotaru

paperID: 121 Start: 09:10 End: 09:30
Finite Element Simulation Of Repeated Impact For Spacer Grid
Nam Kee Song; Pil Sung Heo; Ho Kyung Yoon; Seok Heung Kang

paperID: 224 Start: 09:30 End: 09:50
Implementation Of The Radial Return Method To Transient Shell Dynamics
Jason Har

paperID: 366 Start: 09:50 End: 10:10
Experimental and Numerical Analysis of Notched Marble Beams Under Bending: An Elastic Transversely Isotropic Model
Stavros K Kourkoulis; Zacharias G Agioutantis; Stelios Maurigiannakis; Eustathios Papatheodorou

11:30-1:00 LUNCH BREAK

Session C

MICROSTRUCTURE ANALYSES
CHAIR: H. GAO (Max Planck Institute GERMANY)

paperID: 189 Start: 08:00 End: 08:30
KEYNOTE LECTURE: Rayleigh Waves in Materials with Microstructure and Couple-Stress Effects
Haralambos G. Georgiadis

paperID: 145 Start: 08:30 End: 08:50
Energy Theorems in Mindlin's Gradient Elasticity with Microstructure
Christina G. Grentzelou; Haralambos G. Georgiadis

paperID: 159 Start: 08:50 End: 09:10
Non-smooth Coordinate Transformations for Analytically Modeling Discreteness Effects in the Dynamics of Elastic Continua with Microstructure
Alexander F. Vakakis

paperID: 196 Start: 09:10 End: 09:40
KEYNOTE LECTURE: Molecular Dynamics Simulation of Dislocation Dynamics during Nanoindentation
Marc Thilo Figge; Kristel Michielsen; Hans De Raedt; Jeff De Hosson; Erik van der Giessen

paperID: 569 Start: 09:40 End: 10:00
Indentation of plastically graded substrates by sharp indentors
A. Giannakopoulos

paperID: 229 Start: 10:00 End: 10:20
Size Effect at Micronscale for Linear Elasticity
Pin Tong; David C Lam; F Yang

paperID: 346 Start: 10:20 End: 10:50
KEYNOTE LECTURE: On Certain Numerical Aspects of Gradient Theory
Ioannis Tsagrakis; Elias C. Aifantis

11:30-1:00 LUNCH BREAK

Session D

OPTIMUM STRUCTURAL DESIGN & NUMERICAL METHODS
CHAIR: K. TAMMA (University of Minnesota USA)

paperID: 96 Start: 08:00 End: 08:30
KEYNOTE LECTURE: Design of Passive Silencers
M L Munjal

paperID: 381 Start: 08:30 End: 09:00
KEYNOTE LECTURE: Optimization of Structural Topology and Shape Using Genetic Algorithm
Ramakrishnan V Catti; Swaminathan N; Balamurugan R; Gajbhiye S

paperID: 86 Start: 09:00 End: 09:30
KEYNOTE LECTURE: Node Activation of Geometrically Nonlinear Finite Element System
Jin Yeon Cho

paperID: 126 Start: 09:30 End: 09:50
Optimal Structural Layout Based on a Local Stress Level Using an Evolutionary Procedure
Mohammad Hossein Abolbashari; Shadi Keshavarzmanesh

paperID: 128 Start: 09:50 End: 10:10
Thermally-Treated Gear Wheels Determining the Elastic Characteristics
Giulio Di Francesco; Stefano Marini

paperID: 394 Start: 10:10 End: 10:30
Test Case Study for a Vibrating Mechanical System
E. Budescu; M. Aignatoaie; F. Buium

paperID: 214 Start: 10:30 End: 11:00
Development of a Finite Element Capability for the CF-18 Inboard Leading Edge Flap (ILEF) Patch Repair
Renaud Guillaume; Guoqin Shi; Robert Rutledge; Alexandre Jodoin

11:30-1:00 LUNCH BREAK

Session E

MICROSCALE SIMULATIONS & MULTISCALE MODELING
CHAIR: V. TEWARY (Nat. Inst. of Standards and Tech. USA)

paperID: 228 Start: 08:00 End: 08:30
KEYNOTE LECTURE: Estimation of the Efficiency of the Molecular Motors in an Active Cell
Alexander A Spector

paperID: 406 Start: 08:30 End: 9:10
KEYNOTE LECTURE: Effective Elastic Modulus of Aligned Carbon Nanotube Reinforced Polymer Composites
Chunyu Li; Tsu-Wei Chou

paperID: 359 Start: 09:10 End: 09:50
KEYNOTE LECTURE: Scale Effects in Nickel Alloys
John R. Willis

paperID: 570 Start: 09:50 End: 10:10
Spacecraft Technology Center,Case Study : StarNav II
Magdalini Z Lagoudas; David Boyle; Olivier Godard

paperID: 349 Start: 10:10 End: 10:30
Texas Institute for Bio-Nano Materials and Structures for Aerospace Vehicles (TiiMS)
Dimitris C. Lagoudas; John L. Junkins; Daniel C. Davis

11:30-1:00 LUNCH BREAK