



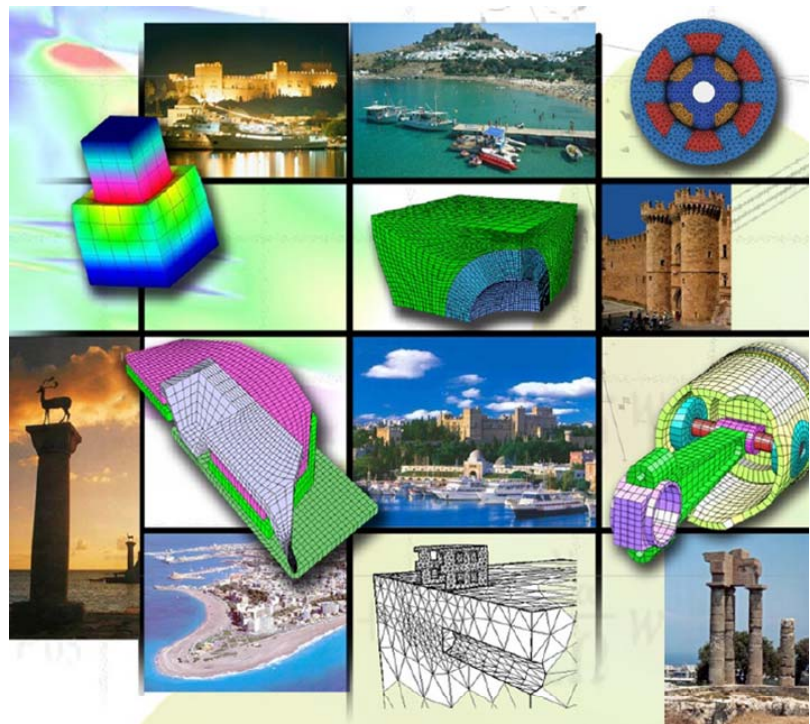
COMPDYN 2009

2nd International Conference on
Computational Methods in
Structural Dynamics and
Earthquake Engineering

PROGRAMME

SEECCM 2009

2nd South-East European
Conference on
Computational Mechanics



Conference Secretariat:
Institute of Structural Analysis and Seismic Research
National Technical University of Athens

COMPDYN 2009

**2nd International Conference on
Computational Methods in Structural
Dynamics and Earthquake Engineering**

**An ECCOMAS Thematic Conference
An IACM Special Interest Conference**

SEECM 2009

**2nd South-East European Conference on
Computational Mechanics**

**An ECCOMAS Special Interest Conference
An IACM Special Interest Conference**

Rhodes, Greece, 22-24 June, 2009

Programme

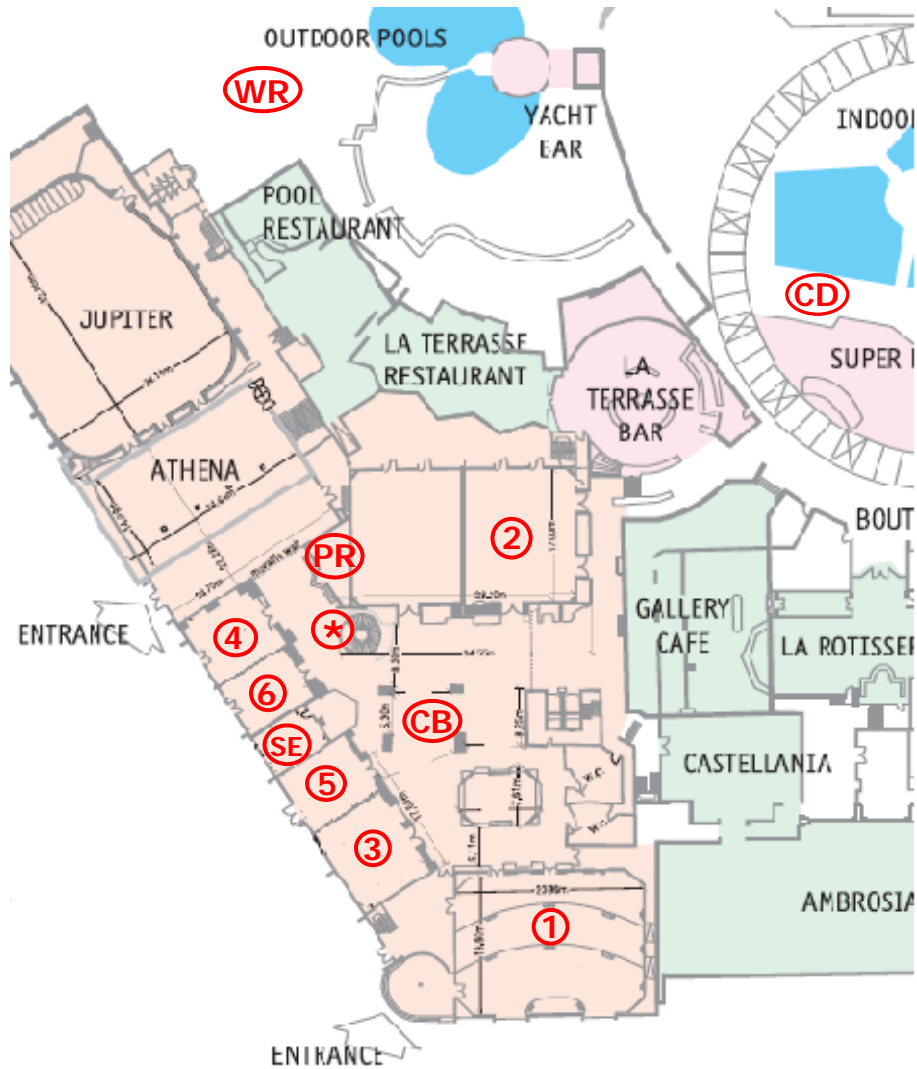


**Institute of Structural Analysis and Seismic Research,
School of Civil Engineering
National Technical University of Athens**

PROGRAMME OVERVIEW

| MONDAY, JUNE 22 | | TUESDAY, JUNE 23 | | WEDNESDAY, JUNE 24 | |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------|
| 08:00 - 08:45 | REGISTRATION | | | | |
| 08:45 - 09:00 | OPENING | | | | |
| 09:00 - 10:30 | PLENARY LECTURES – I | | | | |
| 10:30 - 11:00 | Coffee break | | | | |
| 11:00 - 13:00 | TECHNICAL SESSIONS | 08:30 - 10:30 | TECHNICAL SESSIONS | 08:30 - 10:30 | TECHNICAL SESSIONS |
| ROOM 1 | NUMERICAL SIMULATION FOR STRUCTURAL DYNAMICS | ROOM 1 | ACTIVE – PASSIVE CONTROL | ROOM 1 | UNCERTAINTY ANALYSIS IN STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING – I |
| ROOM 2 | REINFORCED CONCRETE STRUCTURES – I | ROOM 2 | MS: SEISMIC SAFETY ASSESSMENT OF STRUCTURES – I | ROOM 2 | INVERSE PROBLEMS AND SYSTEM IDENTIFICATION |
| ROOM 3 | MS: STATISTICAL AND PROBABILISTIC METHODS IN COMPUTATIONAL MECHANICS TO TREAT ALEATORY AND EPISTEMIC UNCERTAINTIES IN STRUCTURAL AND/OR GEOTECHNICAL SYSTEMS AND THEIR LOADING ENVIRONMENT – I | ROOM 3 | MS: ROBUST STOCHASTIC ANALYSIS, OPTIMAL DESIGN AND MODEL UPDATING OF ENGINEERING SYSTEMS – I | ROOM 3 | MS: COMPUTATION METHODS IN STRUCTURAL ANALYSIS AND FRACTURE MECHANICS – IV |
| ROOM 4 | MS: IDENTIFICATION METHODS IN STRUCTURAL DYNAMICS – I | ROOM 4 | MS: MODELING AND SIMULATIONS OF DYNAMIC SOIL- STRUCTURE INTERACTION – I | ROOM 4 | MS: ANALYSIS METHODS FOR BRIDGES SUBJECTED TO SEISMIC ACTIONS – I |
| ROOM 5 | SOLID AND STRUCTURAL MECHANICS – I | ROOM 5 | MS: COMPUTATIONAL BIOMECHANICS – I | ROOM 5 | MULTIPHYSICS – MULTISCALE PROBLEMS – I |
| ROOM 6 | COMPUTATIONAL METHODS IN EARTHQUAKE ENGINEERING – I | ROOM 6 | SOLID AND STRUCTURAL MECHANICS – II | ROOM 6 | MS: IMAGE PROCESSING AND DATA VISUALIZATION – I |
| ROOM 7 | MS: COMPUTATION METHODS IN STRUCTURAL ANALYSIS AND FRACTURE MECHANICS – I | ROOM 7 | MS: COMPUTATION METHODS IN STRUCTURAL ANALYSIS AND FRACTURE MECHANICS – II | ROOM 7 | SEISMIC DESIGN METHODS |
| ROOM 8 | MS: SEISMIC BEHAVIOUR OF MONUMENTS – I | ROOM 8 | FLUID MECHANICS AND AERODYNAMICS – II | ROOM 8 | FEM : MODELLING AND SIMULATION – II |
| ROOM 9 | WAVE PROPAGATION AND NEAR SOURCE EFFECTS – I | ROOM 9 | MS:THE STOCHASTIC FINITE ELEMENT METHOD: RECENT ADVANCES – I | ROOM 9 | MS: PASSIVE SEMI-ACTIVE AND ACTIVE DAMPERS IN CIVIL ENGINEERING – I |
| | MS: DYNAMIC EFFECTS ON HIGH-SPEED RAILWAY TRACKS – I | | | | |
| ROOM 10 | MS: ADVANCES IN STRUCTURAL VIBRATIONS – I | ROOM 10 | FLUID-STRUCTURE-SOIL INTERACTION | ROOM 10 | MS: MODELING AND SIMULATIONS OF DYNAMIC SOIL- STRUCTURE INTERACTION – II |
| | | 10:30 - 11:00 | Coffee break | 10:30 - 11:00 | Coffee break |
| | | 11:00 - 13:00 | SEMI-PLENARY LECTURES | 11:00 - 13:00 | PLENARY LECTURES – II |
| 13:00 - 14:30 | Lunch time | 13:00 - 14:30 | Lunch time | 13:00 - 14:30 | Lunch time |
| 14:30 - 16:30 | TECHNICAL SESSIONS | 14:30 - 16:30 | TECHNICAL SESSIONS | 14:30 - 16:30 | TECHNICAL SESSIONS |
| ROOM 1 | MS: FANAS SYMPOSIUM ON MODELLING FRICTION AND ADHESION AT THE NANOSCALE – I | ROOM 1 | MS: FANAS SYMPOSIUM ON MODELLING FRICTION AND ADHESION AT THE NANOSCALE – II | ROOM 1 | MS: UNCERTAINTY AND RELIABILITY IN COMPUTATIONAL STRUCTURAL DYNAMICS – I |
| ROOM 2 | MS: PROGRESS AND CHALLENGES IN COLLAPSE PREDICTION – I | ROOM 2 | MS: SEISMIC SAFETY ASSESSMENT OF STRUCTURES – II | ROOM 2 | MS: ALGORITHMS AND COMPUTATIONAL TOOLS IN STRUCTURAL DYNAMICS |

| | | | | | |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------|
| ROOM 3 | MS: STATISTICAL AND PROBABILISTIC METHODS IN COMPUTATIONAL MECHANICS TO TREAT ALEATORY AND EPISTEMIC UNCERTAINTIES IN STRUCTURAL AND/OR GEOTECHNICAL SYSTEMS AND THEIR LOADING ENVIRONMENT – II | ROOM 3 | COMPUTATIONAL METHODS IN GEOTECHNICAL EARTHQUAKE ENGINEERING– I | ROOM 3 | IRREGULAR STRUCTURES |
| ROOM 4 | MS: IDENTIFICATION METHODS IN STRUCTURAL DYNAMICS – II | ROOM 4 | MS: COMPUTATIONAL METHODS FOR WAVES – I | ROOM 4 | MS: ANALYSIS METHODS FOR BRIDGES SUBJECTED TO SEISMIC ACTIONS – II |
| ROOM 5 | MS: DYNAMIC EFFECTS ON HIGH-SPEED RAILWAY TRACKS – II | ROOM 5 | MS: IDENTIFICATION METHODS IN STRUCTURAL DYNAMICS – III | ROOM 5 | MULTIPHYSICS – MULTISCALE PROBLEMS – II |
| ROOM 6 | MS: NUMERICAL SOLUTION OF BOUNDARY VALUE PROBLEMS WITH BOUNDARY SINGULARITIES | ROOM 6 | MECHANICS OF MATERIALS – I | ROOM 6 | MS: IMAGE PROCESSING AND DATA VISUALIZATION – II |
| | MS: ADVANCES IN STRUCTURAL VIBRATIONS – II | | | | |
| ROOM 7 | MS: MULTISCALE MODELING OF BLOOD FLOW AND BLOOD VESSELS | ROOM 7 | MS: COMPUTATION METHODS IN STRUCTURAL ANALYSIS AND FRACTURE MECHANICS – III | ROOM 7 | SEISMIC ISOLATION – I |
| ROOM 8 | MS: SEISMIC BEHAVIOUR OF MONUMENTS – II | ROOM 8 | MS: COMPUTATIONAL ASSESSMENT OF SEISMIC PERFORMANCE OF MASONRY STRUCTURES – I | ROOM 8 | FEM : MODELLING AND SIMULATION – III |
| | COMPUTATIONAL METHODS IN EARTHQUAKE ENGINEERING – II | | | | STABILITY OF SHELLS |
| ROOM 9 | WAVE PROPAGATION AND NEAR SOURCE EFFECTS – II | ROOM 9 | MS: COMPUTATIONAL FLUID MECHANICS – I | ROOM 9 | MASONRY STRUCTURES –II |
| ROOM 10 | FEM: MODELLING AND SIMULATION – I | ROOM 10 | BEM MODELLING AND SIMULATION | ROOM 10 | COMPUTATIONAL METHODS IN GEOTECHNICAL EARTHQUAKE ENGINEERING –II |
| 16:30 - 17:00 | Coffee break | 16:30 - 17:00 | Coffee break | 16:30 - 17:00 | Coffee break |
| 17:00 - 19:00 | TECHNICAL SESSIONS | 17:00 - 19:00 | TECHNICAL SESSIONS | 17:00 - 19:00 | TECHNICAL SESSIONS |
| ROOM 1 | MS: NONLINEAR DYNAMICS | ROOM 1 | MS: FANAS SYMPOSIUM ON MULTISCALE MODELLING OF ADHESION AND FRICTION – III | ROOM 1 | MS: UNCERTAINTY AND RELIABILITY IN COMPUTATIONAL STRUCTURAL DYNAMICS – II |
| ROOM 2 | MS: PROGRESS AND CHALLENGES IN COLLAPSE PREDICTION – II | ROOM 2 | MS: SEISMIC SAFETY ASSESSMENT OF STRUCTURES – III | ROOM 2 | SEISMIC ANALYSIS OF SPECIAL STRUCTURES STRUCTURAL OPTIMIZATION |
| ROOM 3 | MS: STATISTICAL AND PROBABILISTIC METHODS IN COMPUTATIONAL MECHANICS TO TREAT ALEATORY AND EPISTEMIC UNCERTAINTIES IN STRUCTURAL AND/OR GEOTECHNICAL SYSTEMS AND THEIR LOADING ENVIRONMENT – III | ROOM 3 | MS: ROBUST STOCHASTIC ANALYSIS, OPTIMAL DESIGN AND MODEL UPDATING OF ENGINEERING SYSTEMS – II | ROOM 3 | MS: CALIBRATION OF NONLINEAR METHODS OF ANALYSIS FOR SEISMIC ASSESSMENT OF STRUCTURES |
| | | | MS:THE STOCHASTIC FINITE ELEMENT METHOD: RECENT ADVANCES – II | | |
| ROOM 4 | FLUID MECHANICS AND AERODYNAMICS – I | ROOM 4 | MS: COMPUTATIONAL METHODS FOR WAVES – II | ROOM 4 | UNCERTAINTY ANALYSIS IN STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING – II |
| ROOM 5 | MS: DYNAMIC EFFECTS ON HIGH-SPEED RAILWAY TRACKS – III | ROOM 5 | MS: COMPUTATIONAL BIOMECHANICS – II | ROOM 5 | MS: COMPUTATIONAL ASSESSMENT OF SEISMIC PERFORMANCE OF MASONRY STRUCTURES – II |
| ROOM 6 | MS: ACOUSTIC AND STRUCTURAL WAVE TRANSMISSION IN PIPELINES | ROOM 6 | MECHANICS OF MATERIALS – II | ROOM 6 | REPAIR AND RETROFIT OF STRUCTURES |
| | | | | | MS: IMAGE PROCESSING AND DATA VISUALIZATION – III |
| ROOM 7 | STRUCTURAL OPTIMIZATION –CONTROL AND INVERSE PROBLEMS | ROOM 7 | BEM SESSION IN HONOR OF PROF. D.E. BESKOS 65th BIRTHDAY | ROOM 7 | SEISMIC ISOLATION – II |
| ROOM 8 | MASONRY STRUCTURES – I | ROOM 8 | NONLINEAR DYNAMICS | ROOM 8 | MS: PASSIVE SEMI-ACTIVE AND ACTIVE DAMPERS IN CIVIL ENGINEERING – II |
| ROOM 9 | SOIL-STRUCTURE INTERACTION | | | | MS: COMPUTATIONAL FLUID MECHANICS – II |
| ROOM 10 | CONTACT-IMPACT PROBLEMS | ROOM 10 | MS: CYCLIC STATICS AND DYNAMICS OF REINFORCED CONCRETE STRUCTURES | | STEEL AND COMPOSITE STRUCTURES – II |
| | STEEL AND COMPOSITE STRUCTURES – I | | REINFORCED CONCRETE STRUCTURES – II | | |



Ground Floor Plan



First Floor Plan

Conference Important Locations

- ① ÷ ⑩ Conference Rooms
- WR Welcome Reception
- PR Preparation Room
- CB Coffee Breaks
- CD Conference Dinner
- * Stairs
- SE Secretariat

Greetings from the Co-Chairmen

Welcome to the joint **2nd International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering–COMPDYN 2009** and the **2nd South-East European Conference on Computational Mechanics–SEECM 2009** on the island of Rhodes.

COMPDYN 2009, one of the thematic Conferences of the European Community on Computational Methods in Applied Sciences (**ECCOMAS**), is a Special Interest Conference of the International Association for Computational Mechanics (**IACM**) and has been promoted by the European Committee on Computational Solid and Structural Mechanics (ECCSM) of ECCOMAS. The purpose of the Conference is to bring together the scientific communities of Computational Mechanics, Structural Dynamics and Earthquake Engineering in an effort to facilitate the exchange of ideas in topics of mutual interests and to serve as a platform for establishing links between research groups with complementary activities. The communities of Structural Dynamics and Earthquake Engineering will benefit from this interaction, acquainting them with advanced computational methods and software tools which can highly assist in tackling complex problems in dynamic/seismic analysis and design, while also giving the Computational Mechanics community the opportunity to become more familiar with very important application areas of great social interest. The COMPDYN 2009 Conference is supported by the National Technical University of Athens, the European Association for Structural Dynamics (EASD), the European Association for Earthquake Engineering (EAEE), the Greek Association for Computational Mechanics (GRACM) and the John Argyris Foundation.

SEECM 2009 is a Special Interest Conference of ECCOMAS and IACM. Following the growing success of International and National Conferences on Computational Mechanics worldwide, the National Associations of Computational Mechanics of the South-East European countries decided to launch an initiative for the organization of South-East European Conferences every three years. The first conference in this series was held in Kragujevac, Serbia in 2006. The purpose of the Conference is to promote achievements in Computational Mechanics in the South-East European Region by encouraging research and development among young researchers, stimulating education in universities and disseminating modern trends amongst scientists and engineers in the growing field of Simulation-Based Engineering Sciences. The SEECM 2009 Conference is supported by the National Technical University of Athens, the University of Kragujevac, Serbia, the Greek Association for Computational Mechanics (GRACM), the Serbian

Association for Computational Mechanics and the John Argyris Foundation.

Welcome to the “sun island” of Rhodes, situated at the crossroads of two major sea routes of the Mediterranean and the meeting point of three continents, which has been inhabited since about 4000 BC and during its long and rich history has experienced different identities, cultures, architectures and languages. Rhodes has been famous since antiquity as the city of the Colossus of Rhodes, one of the Seven Wonders of the Ancient World, and the citadel of Rhodes, built by the Knights Hospitaller, which is one of the best preserved medieval towns in Europe and was designated as a UNESCO World Heritage Site in 1988.

The organizers would like to thank the authors for submitting their contributions and for their respect of the deadlines. Special thanks go to the 50 colleagues who contributed to the organization of the Minisymposia and to the Referees who, with their work, contributed to the scientific quality of the conferences. We want to express our gratitude to all of them and in particular, we want to thank the students of the Institute of Structural Analysis and Seismic Research at the NTUA for providing assistance in the lecture rooms.

The subject of the conference and the idyllic location offer a perfect blend for scientific endeavor and recreation. Thus, we invite you to enjoy the joint Conferences and the Island of Rhodes and to experience an unforgettable event.

Manolis Papadrakakis
Chairman of COMPDYN 2009
Co-Chairman of SEECCM 2009

Milos Kojic
Co-Chairman of SEECCM 2009

COMPDYN 2009

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Conference Guide

Programme Format

The Technical Programme consists of 7 plenary lectures, 16 semi-plenary lectures, 49 keynote lecturers, 29 minisymposia and 490 presentations in technical sessions.

Plenary Lecturers

K.J. Bathe

ADVANCES IN FINITE ELEMENT PROCEDURES FOR NONLINEAR DYNAMIC RESPONSE

T. Belytschko

MULTISCALE ANALYSIS OF FAILURE

J. Fish, Z. Yuan

HIERARCHICAL MODEL REDUCTION AT MULTIPLE SCALES

D. Frangopol, M. Akiyama

SEISMIC RELIABILITY ANALYSIS OF CORRODED REINFORCED CONCRETE BRIDGE PIERS IN A LIFE-CYCLE PERSPECTIVE

T.J.R. Hughes, A. Reali, G. Sangalli

ISOGEOMETRIC METHODS IN STRUCTURAL DYNAMICS AND WAVE PROPAGATION

H. Krawinkler, F. Zareian, D.G. Lignos, L.F. Ibarra

PREDICTION OF COLLAPSE OF STRUCTURES UNDER EARTHQUAKE EXCITATIONS

G.I. Schuëller

MODEL REDUCTION AND UNCERTAINTIES IN STRUCTURAL DYNAMICS

Semi-plenary Lecturers

O. Allix, L. Gendre, P. Gossel

STABILIZED FINITE ELEMENT METHODS FOR ELASTIC WAVES

F. Auricchio, M. Conti, S. Morganti, A. Reali, U. Stefanelli

SHAPE-MEMORY ALLOYS: EFFECTIVE 3D MODELING, COMPUTATIONAL ASPECTS AND BIOMEDICAL DEVICE ANALYSIS

J.L. Beck

USING MODEL CLASSES IN SYSTEM IDENTIFICATION FOR ROBUST RESPONSE PREDICTIONS

N. Bicanic, T. Koziara

NON SMOOTH CONTACT DYNAMICS ASSESSMENT OF SAFETY CRITICAL BLOCKY ASSEMBLIES

D. Givoli

REDUCTION OF DYNAMIC SYSTEMS AND SUBSYSTEMS

I. Harari, R. Ganel, E. Grosu

NON-INTRUSIVE LOCAL/GLOBAL STRATEGIES FOR SOLVING LARGE PROBLEMS WITH LOCALIZED NONLINEARITIES

S.R. Idelsohn, E. Onate, R. Rossi, J. Marti

MELTING OF THERMOPLASTIC MATERIAL WITH THE PARTICLE FINITE ELEMENT

- B. Jeremic**
DIRECTING ENERGY DISSIPATION IN EARTHQUAKE-SOIL-STRUCTURE SYSTEMS
- S. Krenk**, J. Hogsberg
RESONANT DAMPING OF FLEXIBLE STRUCTURES
- H. G. Matthies**, E. Zander
SPARSE REPRESENTATION IN STOCHASTIC MECHANICS
- K. Meskouris**, B. Holtschoppen, C. Butenweg
SEISMIC DESIGN OF INDUSTRIAL FACILITIES
- R. Ohayon**, J.S. Schotte
VIBRATIONS OF STRUCTURES CONTAINING FLUIDS. ELASTOGRAVITY OPERATOR. COMPRESSIBILITY EFFECTS
- U. Perego**
COMPUTATIONAL MODELS FOR THE SIMULATION OF THE FORMING PROCESS OF CARTON PACKAGES
- D. Peric**, W. Dettmer, M. M. Joosten
ON PARTITIONED STRONGLY COUPLED SOLUTION STRATEGIES FOR FLUID-STRUCTURE INTERACTION: ALGORITHMIC BASIS WITH ASSESSMENT OF SOLUTION METHODOLOGIES
- C. Soize**
INFORMATION THEORY FOR STOCHASTIC MODELING OF UNCERTAINTIES IN HIGH DIMENSION. APPLICATION TO A NEW CONSTRUCTION OF THE CHALLENGING INVERSE PROBLEM RELATIVE TO THE GENERATION OF ACCELEROGRAMS ASSOCIATED WITH SRS
- D.V.H. Vandepitte**, B.R. Mace, P. Lardeur
MODELLING PRODUCT VARIABILITY AND DATA UNCERTAINTY IN STRUCTURAL DYNAMICS ENGINEERING: OVERVIEW OF ACHIEVEMENTS OF THE MC-RTN MADUSE

Keynote Lecturers

- S.A. Anagnostopoulos**, C. Alexopoulou, K. Stathopoulos
AN ANSWER TO A PERSISTING CONTROVERSY IN EARTHQUAKE RESISTANT DESIGN OF ASYMMETRIC BUILDINGS FOR TORSION
- N. Aravas**
FRACTURE MECHANICS AND GRADIENT ELASTICITY: ASYMPTOTIC SOLUTIONS AND NUMERICAL TECHNIQUES
- F. Armero**, C. Linder
NUMERICAL MODELLING OF DYNAMIC FRACTURE
- A.H. Barbat**, J. C. Vielma, S. Oller
SEISMIC SAFETY OF REINFORCED CONCRETE FRAMED BUILDINGS DESIGNED ACCORDING TO EC-2 AND EC-8
- G.A. Papagiannopoulos, **D.E. Beskos**
MODAL STRENGTH REDUCTION (BEHAVIOR) FACTORS FOR SEISMIC DESIGN OF STEEL STRUCTURES
- B. Bhushan**, Y. C. Jung
STUDY OF WETTING TRANSITION OF DROPLETS ON MICROSTRUCTURE FOR SUPERHYDROPHOBICITY – A REVIEW
- C.L. Bottasso**, F. Luraghi, G. Maisano
IDENTIFICATION OF NON-LINEAR AEROELASTIC MODELS FROM EXPERIMENTAL DATA: METHODS AND APPLICATIONS
- A.G. Boudouvis**
ITERATIVE COMPUTATIONS NEAR SINGULARITIES

G. Bouckovalas, K.I. Andrianopoulos, A.G. Papadimitriou
ON THE NUMERICAL MODELING OF GROUND AND FOUNDATION PERFORMANCE
UNDER SEVERE SEISMIC SHAKING AND LIQUEFACTION

D.P. Boso, M.J. Lefik, B.A. Schrefler
THERMO-MECHANICAL MULTISCALE ANALYSIS OF SUPERCONDUCTING CABLES
USING THE GENERALIZED SELF CONSISTENT LIKE METHOD

G. Camata, S. Biondi, G. De Matteis, C. Lai, E. Spacone, I. Vanzi, M. Vasta
POST DAMAGE ASSESSMENT OF THE L' AQUILA, ABRUZZI APRIL 6, 2009
EARTHQUAKE

A. Combescure, N. Mahjoubi, A. Gravouil
A GENERAL ENERGY CONSERVING METHOD FOR CODE COUPLING FOR
STRUCTURAL DYNAMICS

J.P. Conte, B. Moaveni, X. He, A.R. Barbosa
SYSTEM AND DAMAGE IDENTIFICATION STUDIES OF A SEVEN-STORY
REINFORCED CONCRETE BUILDING STRUCTURE SUBJECTED TO SHAKE TABLE
TESTS

P. Decuzzi
THE RATIONAL DESIGN OF PARTICULATE-BASED SYSTEMS FOR BIOMEDICAL
IMAGING AND THERAPY

G. De Roeck, E. Reynders
EXPLORING THE LIMITS AND EXTENDING THE BORDERS OF STRUCTURAL HEALTH
MONITORING

L.M. Steffens, N. Pares, **P. Diez**
ASSESSING THE ERROR IN THE APPROXIMATION OF THE WAVE NUMBER:
STANDARD AND STABILIZED FINITE ELEMENT APPROXIMATIONS OF THE
HELMHOLTZ EQUATION

M. Kreslin, **P. Fajfar**
ON SEISMIC ASSESSMENT OF RC BUILDINGS - A CASE STUDY OF AN ACTUAL
IRREGULAR STRUCTURE

G. Gazetas, G. Anastasopoulos, M. Loli, N. Gerolymos
NONLINEAR INELASTIC SEISMIC RESPONSE OF SLENDER BRIDGE PIER ON
SURFACE FOUNDATION

G.C. Georgiou
NUMERICAL SIMULATIONS OF POLYMER EXTRUSION INSTABILITIES

A. Giannakopoulos, K.P. Baxevanakis
FINITE ELEMENT ANALYSIS OF DISCRETE CIRCULAR DISCLOCATIONS

M.D. Guenov
SYNTHESIS OF COMPUTATIONAL STUDIES FOR EARLY DESIGN OF COMPLEX
SYSTEMS – AN AIRCRAFT PERSPECTIVE

G.M. Hulbert, C. Yilmaz
PHONONIC BAND GAPS IN 2D FINITE MEDIA USING INERTIAL AMPLIFICATION

A. Ibrahimbegovic, J. Colliat
MULTISCALE APPROACH WITH UNCERTAINTY FOR NONLINEAR INELASTIC
BEHAVIOR OF HETEROGENEOUS MATERIAL AND RELATED SIZE EFFECT

H.A. Jensen
STOCHASTIC SENSITIVITY ANALYSIS: AN ESSENTIAL TOOL FOR OPTIMAL DESIGN
OF DYNAMICAL SYSTEMS UNDER UNCERTAIN LOADING

I.F. Moschonas, **A.J. Kappos**
GENERALISED FRAGILITY CURVES FOR BRIDGES, FOR ARBITRARY ANGLE OF
INCIDENCE

J.T. Katsikadelis, N.G. Babouskos

POST-BUCKLING ANALYSIS OF VISCOELASTIC PLATES WITH FRACTIONAL DERIVATIVE MODELS

M.D. Kotsovos

CONSTITUTIVE MODELLING OF CONCRETE BEHAVIOUR: NEED FOR REAPPRAISAL

W.B. Kraetzig, Y.S. Petryna

ON STRUCTURAL DAMAGE PROCESSES OF STORM AND EARTHQUAKE-INDUCED LOW-CYCLE FATIGUE

P. Le Tallec, D. Chapelle, P. Moireau

DATA ASSIMILATION IN STRUCTURAL MECHANICS USING DISPLACEMENT FEEDBACK CONTROL

G. D. Manolis, I. Diamatoulaki, D.C. Angelides

FLUID-SOIL-STRUCTURE INTERACTION: RIGID AND FLEXIBLE, PILE-SUPPORTED PLATFORMS SUBJECTED TO TSUNAMI WAVES

N.C. Markatos

COMPUTATIONAL FLUID MECHANICS FOR SOLVING ENVIRONMENTAL AND ENERGY PROBLEMS

K. Morgan, G. Campagne, B.J. Evans, O. Hassan, J. W. Jones, L. Remaki

THE COMPUTATION OF HIGH SPEED AERODYNAMIC FLOWS USING UNSTRUCTURED MESH METHODS

A.L. Araujo, **C.M. Mota Soares**, Carlos A. Mota Soares, J. Herskovits

OPTIMISATION AND PARAMETER ESTIMATION IN HYBRID LAMINATED SANDWICH COMPOSITE STRUCTURES

J. Oliver, J.C. Cante, R. Weyler, S. Hartman, J.A. Hernandez

ON PARTICLE FINITE ELEMENT METHODS (PFEM) IN DYNAMIC SOLID MECHANICS PROBLEMS

G.E. Thermou, **S.J. Pantazopoulou**, A.S. Elnashai

RETROFIT YIELD SPECTRA FOR THE SEISMIC UPGRADING OF EXISTING RC BUILDINGS

C. Papadimitriou, E. Ntotsios

STRUCTURAL MODEL UPDATING USING VIBRATION MEASUREMENTS

K. Ptilakis, A. Chalatis, G. Tsinidis, E. Kirtas

NUMERICAL ANALYSIS AND SEISMIC DESIGN OF SHALLOW TUNNELS IN SOFT ALLUVIAL DEPOSITS

H.J. Pradlwarter, G.I. Schuëller

RELIABILITY OF NON-LINEAR SYSTEMS SUBJECTED TO DYNAMIC EXCITATION

J.G. Rots, M.A.N. Hendriks, B. Belletti, M.J. DeJong

SEQUENTIALLY LINEAR ANALYSIS AS A PUSHOVER ANALYSIS TOOL FOR MASONRY STRUCTURES

H. Johansson, **K. Runesson**

TARGET CONTROL FOR MECHANICAL SYSTEMS DYNAMICS WITH A POSTERIORI ERROR COMPUTATION

W. Schiehlen

COLOR NOISE EXCITATION OF ENGINEERING STRUCTURES

L. Skerget, J. Ravnik

BOUNDARY ELEMENT ANALYSIS OF GENERAL LAMINAR AND TURBULENT FLUID FLOW PROBLEMS

J. Soric, T. Jarak

AN EFFICIENT MESHLESS FORMULATION FOR ANALYSIS OF SHELL-LIKE STRUCTURES

C.C. Spyrakos, C.A. Maniatakis, I.M. Taflabas

NEAR-SOURCE DIRECTIVITY EFFECTS ON MEDIUM-LONG PERIOD STRUCTURES

G.E. Stavroulakis, N. Kaminakis, Y. Marinakis, M. Marinaki
MULTIOBJECTIVE GLOBAL TOPOLOGY OPTIMIZATION FOR STRUCTURES AND MECHANISMS

P. Steinmann, A. Javili
COMPUTATIONAL MECHANICS OF SOLIDS WITH BOUNDARY POTENTIALS

B. Szabo
VERIFICATION AND VALIDATION IN COMPUTATIONAL SOLID MECHANICS

K.K. Tamma
THE NEXT GENERATION COMPUTATIONAL TECHNOLOGY FOR NONLINEAR DYNAMICS WITH FINITE DEFORMATION AND CONTACT/IMPACT

W.A. Wall, L. Wiechert, A. Comerford, S. Rausch, M.W. Gee, A. Maier
TOWARDS CLINICAL IMPACT THROUGH COMPUTATIONAL BIOMECHANICS

COMPDYN Minisymposia

ACOUSTIC AND STRUCTURAL WAVE TRANSMISSION IN PIPELINES
S. Sorokin, A. Peplow

ADVANCES IN STRUCTURAL VIBRATIONS
E.J. Sapountzakis

ALGORITHMS AND COMPUTATIONAL TOOLS IN STRUCTURAL DYNAMICS
E. Sotelino

ANALYSIS METHODS FOR BRIDGES SUBJECTED TO SEISMIC ACTIONS
A. Kappos

CALIBRATION OF NONLINEAR METHODS OF ANALYSIS FOR SEISMIC ASSESSMENT OF STRUCTURES
E. Spacone

COMPUTATIONAL ASSESSMENT OF SEISMIC PERFORMANCE OF MASONRY STRUCTURES
L. Gambarotta, B. Shing

COMPUTATIONAL METHODS FOR WAVES
D. Givoli, I. Harari

CYCLIC STATICS AND DYNAMICS OF REINFORCED CONCRETE STRUCTURES
K.V. Spiliopoulos

DYNAMIC EFFECTS ON HIGH-SPEED RAILWAY TRACKS
R. Delgado, R. Calcada

IDENTIFICATION METHODS IN STRUCTURAL DYNAMICS
C. Papadimitriou, I. Au

MODELING AND SIMULATIONS OF DYNAMIC SOIL- STRUCTURE INTERACTION
B. Jeremic

NONLINEAR DYNAMICS
A. Ibrahimbegovic, L. Davenne

PASSIVE SEMI-ACTIVE AND ACTIVE DAMPERS IN CIVIL ENGINEERING
R.C. Barros, A. Baratta

PROGRESS AND CHALLENGES IN COLLAPSE PREDICTION
H. Krawinkler, F. Zareian

ROBUST STOCHASTIC ANALYSIS, OPTIMAL DESIGN AND MODEL UPDATING OF ENGINEERING SYSTEMS
J.L. Beck, A.A. Taflanidis, H.A. Jensen

SEISMIC BEHAVIOUR OF MONUMENTS

I. Vayas, J. Psycharis

SEISMIC SAFETY ASSESSMENT OF STRUCTURES

R. Delgado, R.A. Arede

STATISTICAL AND PROBABILISTICAL METHODS IN COMPUTATIONAL MECHANICS TO TREAT ALEATORY AND EPISTEMIC UNCERTAINTIES IN STRUCTURAL AND/OR GEOTECHNICAL SYSTEMS AND THEIR LOADING ENVIRONMENT

M. Barbato, J.P. Conte

UNCERTAINTY AND RELIABILITY IN COMPUTATIONAL STRUCTURAL DYNAMICS

C. Soize , G.I. Schueller

SEECCM Minisymposia

COMPUTATION METHODS IN STRUCTURAL ANALYSIS AND FRACTURE MECHANICS

S. Maksimovic

COMPUTATIONAL BIOMECHANICS

C. Provatidis

COMPUTATIONAL FLUID MECHANICS

N. Markatos

FANAS SYMPOSIUM OF MODELING FRICTION AND ADHESION AT THE NANOSCALE

P. Decuzzi, G. Carbone

IMAGE PROCESSING AND DATA VISUALIZATION

J.M.R.S. Tavares, C.E. Constantinou

MULTISCALE MODELLING OF BLOOD FLOW AND BLOOD VESSELS

N. Filipovic

NUMERICAL SOLUTION OF BOUNDARY VALUE PROBLEMS WITH BOUNDARY SINGULARITIES

G. Georgiou, C. Xenophontos

THE STOCHASTIC FINITE ELEMENT METHOD: RECENT ADVANCES

G. Stefanou, V. Papadopoulos, M. Papadrakakis

Social Programme

The Social Programme includes a Welcome Reception and Dinner. It will be free for registered participants and accompanying persons. (The Conference Dinner is not included in the reduced student's fee).

The Welcome Reception is scheduled for Sunday 21st June at 19:30. It will take place at the outdoor pools of the Rodos Palace Hotel. The Conference Dinner will be held on Tuesday 23rd at 20:30 at the dome indoor pool of Rodos Palace Hotel.

Accompanying Persons Programme

The accompanying persons programme features a number of guided tours:

| Tour | Duration | Date |
|----------------------|----------|--------------------------|
| Symi Island | Full day | Sunday, 21/06/2009 |
| Rhodes City | Half day | Monday, 22/06/2009 |
| Lindos | Half day | Tuesday, 23/06/2009 |
| Kos Island | Full day | Wednesday, 24/06/2009 |
| Marmaris (Turkey) | Full day | Thursday, 25/06/2009 |

Reservations can be made through the appointed travel agent FREI S.A. Travel-Congress (e-mail: compdyn-seeccm2009@frei.gr).

Where to eat

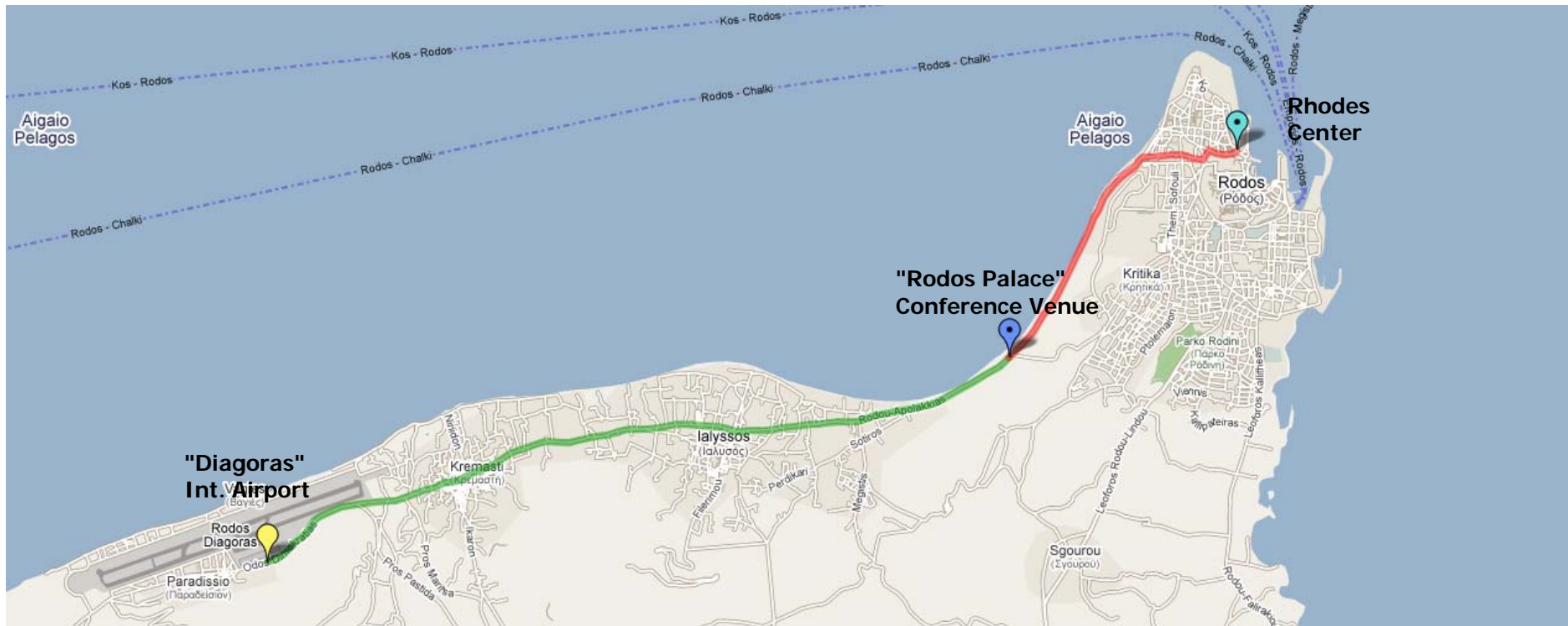
Participants may have lunch at the hotel restaurants or cafeterias for snacks or restaurants that will operate during the conference. Additional restaurants are located within walking distance of the conference hotel, along the coast.

Speakers Preparation Room

Each lecture room will be equipped with a LCD projector. We recommend that you confirm the compatibility of your laptop with the provided projector well before the start of the sessions.

Internet Access

Wireless internet access will be available at the Atrium Lobby of the hotel where the coffee breaks will take place and in the Speakers Preparation Room.



MONDAY, JUNE 22

| | | |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Mon 08:00 – 08:45 | REGISTRATION | |
| Mon 08:45 – 09:00 | OPENING | |
| Mon 09:00 - 10:30 | PLENARY LECTURES – I | Room 1 |
| | <i>Chair: T. Belytschko</i> | |
| | CD358 ISOGEOMETRIC METHODS IN STRUCTURAL DYNAMICS AND WAVE PROPAGATION T.J.R. Hughes, A. Reali, G. Sangalli | |
| | CD474 MODEL REDUCTION AND UNCERTAINTIES IN STRUCTURAL DYNAMICS G.I. Schueller | |
| | CD449 PREDICTION OF COLLAPSE OF STRUCTURES UNDER EARTHQUAKE EXCITATIONS H. Krawinkler, F. Zareian, D.G. Lignos, L.F. Ibarra | |
| Mon 10:30 - 11:00 | Coffee Break | |
| Mon 11:00 – 13:00 | TECHNICAL SESSIONS | |
| Mon 11:00 - 13:10 | NUMERICAL SIMULATION FOR STRUCTURAL DYNAMICS | Room 1 |
| | <i>Chair: F. Armero</i> | |
| | KEYNOTE: CD302 A GENERAL ENERGY CONSERVING METHOD FOR CODE COUPLING FOR STRUCTURAL DYNAMICS A. Combescure, N. Mahjoubi, A. Gravouil | |
| | KEYNOTE: CD453 NUMERICAL MODELLING OF DYNAMIC FRACTURE F. Armero, C. Linder | |
| | KEYNOTE: CD530 ON PARTICLE FINITE ELEMENT METHODS (PFEM) IN DYNAMIC SOLID MECHANICS PROBLEMS J. Oliver, J.C. Cante, R. Weyler, S. Hartman, J.A. Hernandez | |
| | CD424 EFFECT OF BUMP AT EXPANSION JOINT ON DYNAMIC RESPONSE OF TWIN I-GIRDER BRIDGES UNDER MOVING VEHICLE T.L. Ngo-Tran, T. Hayashikawa, T. Matsumoto, X. He | |
| | CD320 MODELING THE LATERAL PEDESTRIAN FORCE ON RIGID AND MOVING FLOORS BY A SELF-SUSTAINED OSCILLATOR A. Trovato, S. Erlicher, P. Argoul | |
| Mon 11:00-13:00 | REINFORCED CONCRETE STRUCTURES – I | Room 2 |
| | <i>Chair: A. Kappos</i> | |
| | KEYNOTE: CD390 CONSTITUTIVE MODELLING OF CONCRETE BEHAVIOUR: NEED FOR REAPPRAISAL M.D. Kotsovos | |
| | CD121 FINITE ELEMENT MODELLING OF STRUCTURAL CONCRETE D.M. Cotsovos, C.A. Zeris, A.A. Abbas | |
| | CD261 3D NONLINEAR FINITE ELEMENT SIMULATIONS OF A RC BUILDING MOCK-UP SUBJECT TO TRI-DIMENSIONAL EARTHQUAKE G. Lebon, F. Ragueneau, R. Desmorat | |

CD234 MODELLING GRADUAL SPREAD OF INELASTIC FLEXURAL, SHEAR AND BOND-SLIP DEFORMATIONS AND THEIR INTERACTION IN PLASTIC HINGE REGIONS OF R/C MEMBERS
P.E. Mergos, A.J. Kappos

CD556 INVESTIGATION OF MATERIAL QUALITY EFFECT ON SEISMIC PERFORMANCE OF EXISTING R/C BUILDINGS
I.E. Bal, F.G. Gulay

Mon 11:00-13:00

MS: STATISTICAL AND PROBABILISTIC METHODS IN COMPUTATIONAL MECHANICS TO TREAT ALEATORY AND EPISTEMIC UNCERTAINTIES IN STRUCTURAL AND/OR GEOTECHNICAL SYSTEMS AND THEIR LOADING ENVIRONMENT – I

***Minisymposium Organizers:* M. Barbato, J.P. Conte
Chair: M. Barbato, J.P. Conte**

Room 3

CD119 TIME-VARIANT SPECTRAL CHARACTERISTICS OF NONSTATIONARY RANDOM PROCESSES: AN APPLICATION TO STRUCTURAL RELIABILITY AND EARTHQUAKE ENGINEERING
M. Barbato

CD343 RELIABILITY DECOMPOSITION OF DYNAMIC WIND LOAD ON STRUCTURES
R.D. Bertero

CD153 STRUCTURAL RELIABILITY ANALYSIS USING THE DP-RS-SIM METHOD
M. Barbato, Q. Gu, J.P. Conte

CD359 ADAPTIVE RELIABILITY ANALYSIS OF REGIONAL INFRASTRUCTURE
T. Haukaas, M. Mahsuli

CD281 DATA ASSIMILATION AND RELIABILITY ESTIMATION OF EXISTING RC STRUCTURE
I.Yoshida

CD519 CORRELATION IN SPECTRAL ACCELERATIONS OF ITALIAN GROUND MOTION RECORDS
G.P.Cimellaro, Yin-Nan Huang, A. De Stefano

Mon 11:00-13:00

MS: IDENTIFICATION METHODS IN STRUCTURAL DYNAMICS – I

***Minisymposium Organizers:* C. Papadimitriou, I. Au
Chair: C. Papadimitriou, I. Au**

Room 4

KEYNOTE: CD509 SYSTEM AND DAMAGE IDENTIFICATION STUDIES OF A SEVEN-STORY REINFORCED CONCRETE BUILDING STRUCTURE SUBJECTED TO SHAKE TABLE TESTS

J.P. Conte, B. Moaveni, X. He, A.R. Barbosa

KEYNOTE: CD467 STRUCTURAL MODEL UPDATING USING VIBRATION MEASUREMENTS

C. Papadimitriou, E. Ntotsios

CD332 EFFECTS OF INPUT FEATURES IN SUPPORT VECTOR MACHINE BASED ROLLING ELEMENT BEARING FAULT DETECTION AND TRENDING

K.C. Gryllias, C.Yiakopoulos, I. Antoniadis

CD445 THE DETERMINATION OF THE DAMPING PARAMETER OF SOILS WITH THE SASW METHOD

S.A. Badsar, M. Schevenels, G. Degrande

CD311 PROBABILISTIC DAMAGE ASSESSMENT OF A SEVEN-STORY REINFORCED CONCRETE SHEAR WALL BUILDING BY MEANS OF BAYESIAN FE MODEL UPDATING
G. Lombaert, B. Moaveni, X. He, J.P. Conte

Mon 11:00-13:00

SOLID AND STRUCTURAL MECHANICS – I
Chair: J. Soric

Room 5

KEYNOTE: SE224 COMPUTATIONAL MECHANICS OF SOLIDS WITH BOUNDARY POTENTIALS
P. Steinmann, A. Javili

SE225 INFLUENCE OF SOIL STIFFNESS ON THE DYNAMIC BEHAVIOUR OF BRIDGES TRAVELED BY HIGH SPEED TRAINS
J.R. Devesa, J. Kolfors, J.M. Proenca

SE219 DEPENDENCE OF CONTACT AREA ON THE RESOLUTION OF FRACTAL INTERFACES FOR ELASTIC AND INELASTIC PROBLEMS
O. Panagouli, E. Mistakidis

SE262 EPISTYLES CONNECTED WITH DOUBLE “T” CONNECTORS UNDER PURE SHEAR
S.K. Kourkoulis, E.D. Pasiou

SE149 APPLICATION OF SPECIFIC FINITE ELEMENTS FOR MODELING OF CONTACT PROBLEMS
I. Matijevic, D. Kovacevic

Mon 11:00-13:00

COMPUTATIONAL METHODS IN EARTHQUAKE ENGINEERING – I
Chair: S. Anagnostopoulos

Room 6

KEYNOTE: CD398 ON STRUCTURAL DAMAGE PROCESSES OF STORM AND EARTHQUAKE-INDUCED LOW-CYCLE FATIGUE
W.B. Kraetzig, Y.S. Petryna

CD205 PARAMETERS INFLUENCING THE DYNAMIC RESPONSE OF RIGID BLOCK ASSEMBLIES IN NUMERICAL SIMULATIONS
L. Papaloizou, P. Komodromos

CD180 EFFECTS OF SEISMIC INCIDENT ANGLE ON RESPONSE OF STRUCTURES UNDER BI-DIRECTIONAL RECORDED AND ARTIFICIAL GROUND MOTION
A.G. Tsourekas, A.M. Athanatopoulou, I.E. Avramidis

CD510 SEISMIC RESPONSE OF MOMENT RESISTING FRAMES THROUGH INCREMENTAL DYNAMIC ANALYSIS
B. Asgarian, A. Sadrinezhad, P. Alanjari

SE126 DYNAMIC BEHAVIOR OF COOLING TOWERS UNDER GROUND ACCELERATION AND REAL TIME MOTION VISUALIZATION
C. Lang

Mon 11:00-13:00

MS: COMPUTATION METHODS IN STRUCTURAL ANALYSIS AND FRACTURE MECHANICS – I
Minisymposium Organizer: S. Maksimovic
Chair: S. Maksimovic

Room 7

KEYNOTE: SE304 FRACTURE MECHANICS AND GRADIENT ELASTICITY: ASYMPTOTIC SOLUTIONS AND NUMERICAL TECHNIQUES
N. Aravas

KEYNOTE: SE220 VERIFICATION AND VALIDATION IN COMPUTATIONAL SOLID MECHANICS

B. Szabo

SE317 GEOMETRICALLY NONLINEAR ANALYSIS OF 2D-SOLIDS USING RADIAL POINT INTERPOLATION METHOD

B. Kanber, O.Y. Bozkurt

SE301 STRUCTURAL ANALYSIS OF TELECOMMUNICATIONS TOWERS USING A SIMPLIFIED LOADING COMPUTED BY OPTIMIZATION TECHNIQUES

M.A. Silva, R.M.L.R.F. Brasil, R.A. Morais

SE243 COMPUTATION ANALYSIS OF FRACTURE MECHANICS PARAMETERS IN TURBINE COMPONENTS USING FEM AND J-INTEGRAL APPROACH

D. Stamenkovic

Mon 11:00-13:00

MS: SEISMIC BEHAVIOUR OF MONUMENTS – I

Room 8

Minisymposium Organizers: I. Vayas, J. Psycharis

Chair: I. Vayas, J. Psycharis

CD528 TOWARDS A RELIABLE PREDICTION OF THE SEISMIC BEHAVIOUR OF HISTORIC STRUCTURES: THE IMPORTANCE OF STRUCTURAL SURVEY

E.N. Vintzileou

CD527 PROTECTION OF MEDITERRANEAN HISTORICAL STRUCTURES AGAINST EARTHQUAKES USING FRAGILITY CURVES

C.A. Syrmakizis, M.T. Kosta

CD525 SEISMIC BEHAVIOUR OF THE WALLS OF THE PARTHENON- A NUMERICAL STUDY

I.N. Psycharis, A.E. Drougas, M.E. Dasiou

CD526 SEISMIC RESPONSE OF THE 35M HIGH MASONRY CHIMNEY OF THE ALLATINI COMPLEX

C. Stylianidis, A. Sextos, K. Stylianidis

CD550 ON THE USE OF VISCOUS DAMPERS FOR THE PROTECTION OF MONUMENTS

C.Z. Chrysostomou, A. Stassis, T. Demetriou

CD489 OPTIMAL DESIGN OF SEISMIC ISOLATORS FOR MUSEUM ARTIFACTS

N.D. Peppas, V.K. Koumouis

Mon 11:00-13:00

WAVE PROPAGATION AND NEAR SOURCE EFFECTS – I

Room 9

Chair: Y. Tsompanakis

KEYNOTE:CD701 NEAR-SOURCE DIRECTIVITY EFFECTS ON MEDIUM-LONG PERIOD STRUCTURES

C.C. Spyrakos, C.A. Maniatakis, I.M. Taflabas

CD225 COMPARISON OF STRUCTURAL SEISMIC RESPONSE BASED ON REAL AND SPECTRUM COMPATIBLE NEAR-SOURCE GROUND MOTION RECORDS

A. Azarbakht

CD308 REAL TIME PROGNOSIS MODEL TO GENERATE THE NEAR FIELD EARTHQUAKES SIGNAL

A.Z. Khameneh, R.J. Scherer

MS: DYNAMIC EFFECTS ON HIGH-SPEED RAILWAY TRACKS – I

Minisymposium Organizers: R. Delgado, R. Calcada

Chair: R. Delgado, R. Calcada

CD259 VIBRATION CONTROL OF HIGH-SPEED RAILWAY BRIDGES USING NON LINEAR VISCOELASTIC DAMPERS

E. Moliner, P. Museros, J. Nasarre

CD317 PRACTICAL ASPECTS RELATED TO THE RETROFIT OF RAILWAY BRIDGES UNDER HIGH-SPEED TRAFFIC

M.D. Martinez-Rodrigo, J. Lavado, J. Nasarre

Mon 11:00-13:20

MS: ADVANCES IN STRUCTURAL VIBRATIONS – I

Room 10

Minisymposium Organizer: E. Sapountzakis

Chair: E. Sapountzakis

CD143 NONLINEAR NONUNIFORM TORSIONAL VIBRATIONS OF BARS BY BEM

E.J. Sapountzakis, V.J. Tsipiras

CD144 EXACT SOLUTION OF THE BENDING VIBRATION PROBLEM OF FGM MULTILAYERED SANDWICH BEAM WITH VARIATION OF MATERIAL PROPERTIES

J. Murin, M. Aminbaghai, V. Kutis

CD145 AN ALGORITHM FOR VIBRATION ANALYSIS OF A TORSIONAL SYSTEM WITH CLEARANCES

N. Kranjcevic, M. Stegic, N. Vrankovic

CD111 EXPERIMENTAL AND NUMERICAL ANALYSIS OF THE DYNAMIC CHARACTERISTICS OF A BRIDGE PIER MODEL

V.G. Terzi, K. Pitilakis

CD316 ON THE IDENTIFICATION OF PYROTECHNIC SHOCKS APPLIED TO COMPLEX STRUCTURES, USING A MEDIUM-FREQUENCY DEDICATED METHOD

G. Bezier, P. Ladeveze, H. Riou, H. Leclerc

CD110 COUPLED VIBRATIONS OF BEAMS WITH LATERAL LOADS

G.M. Voros

CD142 NONLINEAR DYNAMIC ANALYSIS OF TIMOSHENKO BEAMS

E.J. Sapountzakis, J.A. Dourakopoulos

Mon 13:00 - 14:30

Lunch Time

Mon 14:30 – 16:30

TECHNICAL SESSIONS

Mon 14:30-16:50

MS: FANAS SYMPOSIUM ON MODELLING FRICTION AND ADHESION AT THE NANOSCALE – I

Room 1

Minisymposium Organizers: P. Decuzzi, G. Carbone

Chair: P. Decuzzi, G. Carbone

KEYNOTE: SE328 STUDY OF WETTING TRANSITION OF DROPLETS ON MICROSTRUCTURE FOR SUPERHYDROPHOBICITY – A REVIEW

B. Bhushan, Y. C. Jung

KEYNOTE: SE274 THE RATIONAL DESIGN OF PARTICULATE-BASED SYSTEMS FOR BIOMEDICAL IMAGING AND THERAPY

P. Decuzzi

SE275 THEORY OF AFM FRICTIONAL DISSIPATION AT SURFACE MOIRE PATTERNS

C. Negri, N. Manini, A. Vanossi, G.E. Santoro, E. Tosatti

SE308 DRIVING ON THE NANOSCALE: A MULTISCALE PROBLEM

E. Gnecco, A. Rao, P. Steiner, R. Roth, E. Meyer

SE281 THE TRANSITION FROM BOUNDARY TO HYDRODYNAMIC LUBRICATION REGIME

M. Scaraggi, Bo N.J. Persson

SE267 DYNAMICAL RUPTURE OF MOLECULAR BONDS: FROM SINGLE MOLECULAR STUDIES TO NANOMANIPULATION

J. Klafter, M. Urbakh

Mon 14:30-16:30

MS: PROGRESS AND CHALLENGES IN COLLAPSE PREDICTION – I

***Minisymposium Organizers:* H. Krawinkler, F. Zareian**

***Chair:* H. Krawinkler, F. Zareian**

Room 2

CD516 NUMERICAL STRATEGIES FOR STRUCTURAL ROBUSTNESS ASSESSMENT

L. Giuliani, F. Bontempi

CD452 FIRE INDUCED PROGRESSIVE COLLAPSE OF TALL BUILDINGS

A.S. Usmani

CD368 RATE DEPENDENT MOMENT-CURVATURE RELATIONS FOR THE PROGRESSIVE COLLAPSE ANALYSIS OF RC STRUCTURES

B. Santafe, T.J. Massart, P. Bouillard, J. Vantomme

CD393 TWO-DIMENSIONAL NUMERICAL MODELING OF LIGHT-FRAME WOOD STRUCTURES FOR SEISMIC COLLAPSE ASSESSMENT

I.P. Christovasilis, A. Filiatrault

CD394 GLOBAL COLLAPSE OF SEISMIC EXCITED NON-DETERIORATING FRAME STRUCTURES VULNERABLE TO P-DELTA EFFECTS

C. Adam, C. Jager

CD450 ESTIMATING THE DYNAMIC INSTABILITY OF OSCILLATORS WITH NON-TRIVIAL BACKBONES

D. Vamvatsikos, E. Miranda, S. Akkar

Mon 14:30-16:30

MS: STATISTICAL AND PROBABILISTIC METHODS IN COMPUTATIONAL MECHANICS TO TREAT ALEATORY AND EPISTEMIC UNCERTAINTIES IN STRUCTURAL AND/OR GEOTECHNICAL SYSTEMS AND THEIR LOADING ENVIRONMENT – II

***Minisymposium Organizers:* M. Barbato, J.P. Conte**

***Chair:* M. Barbato, J.P. Conte**

Room 3

CD294 RELIABILITY ANALYSIS OF BRIDGE MODELS WITH ELASTOMERIC BEARINGS AND SEISMIC STOPPERS UNDER STOCHASTIC EARTHQUAKE EXCITATIONS

K. Perros, C. Papadimitriou

CD277 DAMAGE PROGNOSIS OF ADHESIVELY-BONDED JOINTS IN LAMINATED COMPOSITE STRUCTURAL COMPONENTS OF UNMANNED AERIAL VEHICLES

M. Gobbato, J.P. Conte, J.B. Kosmatka, J.A. Oliver, C.R. Farrar

CD491 NONLINEAR DYNAMIC RESPONSE VARIABILITY OF FRAMES WITH STOCHASTIC NON-GAUSSIAN PARAMETER UNCERTAINTY

G. Stefanou, M. Fragiadakis

CD562 PERFORMANCE UNCERTAINTY ESTIMATION USING SIMPLIFIED METHODS OF ANALYSIS

M. Fragiadakis, D. Vamvatsikos

CD401 STRUCTURAL RELIABILITY OF BURIED NETWORKS IN A HETEROGENEOUS AND ALEATORY ENVIRONMENT SUBJECTED TO SEISMIC ACTIONS

S.M. Elachachi, D. Breysse, H. Benzeguir

Mon 14:30-16:30

MS: IDENTIFICATION METHODS IN STRUCTURAL DYNAMICS – II

Room 4

Minisymposium Organizers: C. Papadimitriou, I. Au

Chair: C. Papadimitriou, I. Au

CD391 RECONSTRUCTING DYNAMIC MOVING LOADS USING AN EXTENDED DYNAMIC PROGRAMMING ALGORITHM AND EIGENVALUE REDUCTION

E. Lourens, G. Lombaert, G. De Roeck, G. Degrande

CD340 NONLINEAR NONPARAMETRIC SYSTEM IDENTIFICATION METHOD WITH BROAD APPLICABILITY

Y.S. Lee, S. Tsakirtzis, A.F. Vakakis, L.A. Bergman, D.M. McFarland

CD427 BOND GRAPH-BASED QUALITATIVE-QUANTITATIVE HEALTH ASSESSMENT OF STRUCTURES

A. Moustafa, S. Mahadevan, I. Takewaki

CD439 A DESIGN OF MULTI-CHANNEL WIRELESS SENSING SYSTEM FOR STRUCTURAL MONITORING

S. Casciati, L. Faravelli, Z. Chen

CD438 DETECTING THE TORSIONAL BEHAVIOR OF A TALL BUILDING BY GPS RECEIVERS

R. AlSaleh, F. Casciati, C. Fuggini

CD221 APPLICATIONS OF SEISMIC INTERFEROMETRY FOR SYSTEM IDENTIFICATION IN EARTHQUAKE ENGINEERING

E. Safak, E. Cakti

Mon 14:30-16:30

MS: DYNAMIC EFFECTS ON HIGH-SPEED RAILWAY TRACKS – II

Room 5

Minisymposium Organizers: R. Delgado, R. Calcada

Chair: R. Delgado, R. Calcada

CD171 NEW PROPOSAL FOR DYNAMIC FACTORS FOR EN 1991-2 ULTIMATE AND SERVICEABILITY STATES VERIFICATIONS ON HIGH-SPEED RAILWAY BRIDGES

M. Pereira, J. Proenca

CD130 DYNAMIC INTERACTION ANALYSIS OF HIGH SPEED TRAIN AND RAILWAY STRUCTURE INCLUDING POST-DERAILMENT BEHAVIOUR DURING AN EARTHQUAKE

M. Tanabe, H. Wakui, N. Matsumoto, M. Sogabe, Y. Tanabe

CD425 COMPUTATION MODELS FOR ASSESSING DYNAMIC EFFECTS ON UNDERPASSES IN HIGH SPEED RAILWAY LINES

M. Cuadrado, P. Gonzalez

CD329 PARAMETRIC INSTABILITY OF A WHEELSET OF HIGH-SPEED TRAIN CAUSED BY THE SPATIAL PERIODICITY OF A RAILWAY TRACK

A.V. Metrikine

CD304 GROUND VIBRATION INDUCED BY MOVING TRAINS ON BALLASTED AND RIGID TRACKS USING A PERIODIC BOUNDARY ELEMENT FORMULATION

M.A. Millan, J. Dominguez

- Mon 14:30-16:40** **MS: NUMERICAL SOLUTION OF BOUNDARY VALUE PROBLEMS WITH BOUNDARY SINGULARITIES** **Room 6**
Minisymposium Organizers: G. Georgiou, C. Xenophontos
Chair: G. Georgiou, C. Xenophontos
- KEYNOTE: SE183 ITERATIVE COMPUTATIONS NEAR SINGULARITIES**
A.G. Boudouvis
- SE184 TREATMENT OF SINGULARITIES OF ELLIPTIC BOUNDARY VALUE PROBLEMS WITH A HYBRID BOUNDARY INTEGRAL METHOD
G. Pashos, A.G. Boudouvis
- SE201 NONCONFORMING METHODS FOR TIME-HARMONIC MAXWELL'S EQUATIONS USING GRADED MESHES
S.C. Brenner
- SE125 ANALYSIS OF THE SINGULAR FUNCTION BOUNDARY INTEGRAL METHOD FOR TWO-DIMENSIONAL BIHARMONIC PROBLEMS WITH A BOUNDARY SINGULARITY
M.C. Elliotis, C. Xenophontos, G.C. Georgiou
- MS: ADVANCES IN STRUCTURAL VIBRATIONS – II**
Minisymposium Organizer: E. Sapountzakis
Chair: E. Sapountzakis
- CD170 H_∞ CONTROL FOR ACTIVE VIBRATION SUPPRESSION IN SMART STRUCTURES USING NONSMOOTH AND NONCONVEX OPTIMIZATION
A.J. Moutsopoulou, G.E. Stavroulakis, A.D. Pouliezos
- CD146 CONTROL OF TORSIONAL VIBRATIONS BY PIEZOELECTRIC SENSORS AND ACTUATORS
C. Zehetner, M. Krommer
- Mon 14:30-16:30** **MS: MULTISCALE MODELING OF BLOOD FLOW AND BLOOD VESSELS** **Room 7**
Minisymposium Organizers: N. Filipovic, M. Kojic
Chair: N. Filipovic, M. Kojic
- SE315 SIMULATION OF BLOOD FLOW THROUGH AORTA WITH AND WITHOUT ANEURISM USING COMPUTATIONAL VIRTUAL SURGERY
D.Z. Milasinovic, N. Jagic, V.Miloradovic, D. Bockler, H. Von Tengg-Kobligk, N.D. Filipovic, M.R. Kojic
- SE312 AN INFLAMMATORY MATHEMATICAL MODEL OF THE ATHEROSCLEROTIC PLAQUE FORMATION
M. Boynard, V. Calvez, A. Ebde, A. Hamraoui, N. Meunier, A. Raoult
- SE284 ARTOOL: A PLATFORM FOR ATHEROSCLEROSIS MULTI-LEVEL MODELLING
A.I. Sakellarios, V.D. Tsakanikas, N.D. Filipovic, L.K. Michalis, D.I. Fotiadis, C.V. Bourantas
- SE319 DPD MODEL OF PLATELET AGGREGATION INCLUDING ACTIVATION DELAY TIME AND PROBABILISTIC BINDING
N.D. Filipovic, D. Petrovic, M.R. Kojic
- SE320 ON LOOSE VS STRONG COUPLING FOR FLUID-SOLID INTERACTION IN CASE OF DEFORMABLE BODY MOTION THROUGH INCOMPRESSIBLE FLUID
M. Kojic, N. Filipovic, V. Isailovic, I. Vlastelica, B. Stojanovic, D. Petrovic, T. Djukic, P. Decuzzi, M. Ferrari

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| Mon 14:30-16:30 | <p>MS: SEISMIC BEHAVIOUR OF MONUMENTS – II <i>Minisymposium Organizers: I. Vayas, J. Psycharis</i> <i>Chair: I. Vayas, J. Psycharis</i></p> <p>CD522 ASSESSMENT OF THE SEISMIC CAPACITY OF STONE MASONRY WALLS WITH BLOCK MODELS J.V. Lemos, A.C. Costa, E.M. Bretas</p> <p>CD523 THE DYNAMIC AND EARTHQUAKE RESPONSE OF A GREEK POST-BYZANTINE BASILICAS G.C. Manos, V.J. Soulis, O. Felekidou, A. Koutsianou, P. Lipiridou</p> <p>CD529 NUMERICAL ANALYSIS OF BYZANTINE CHURCH MODELS G. Kokalanov, M. Stankovska</p> <p>CD553 CONSTRAINING PALEOSEISMIC PGA USING NUMERICAL ANALYSIS OF STRUCTURAL FAILURES IN HISTORIC MASONRY STRUCTURES Y. Hatzor</p> <p>COMPUTATIONAL METHODS IN EARTHQUAKE ENGINEERING – II</p> <p>CD448 DISPLACEMENT-BASED ADAPTIVE PUSHOVER S. Antoniou, R. Pinho</p> <p>CD573 SEISMIC PERFORMANCE OF METALLIC BRACED FRAMES BY PUSHOVER ANALYSES M.T. Braz-César, R.C..Barros</p> | Room 8 |
| Mon 14:30-16:30 | <p>WAVE PROPAGATION AND NEAR SOURCE EFFECTS – II <i>Chair: G. De Roeck</i></p> <p>CD262 ANALYSIS OF THE APPLICATION OF THE NEAR-FAULT GROUND MOTION FUNCTIONS J. Gyorgyi</p> <p>CD108 APPLICATION OF FOURIER TRANSFORMATION AND FREQUENCY DOMAIN TO PREPARE A DYNAMIC TEST MODEL TO DETERMINE DYNAMIC PROPERTIES OF BURIED STRUCTURE AND SURROUNDING SOIL A.M. Goltabar Roshan, M.H. Khalilpasha, H. Khalilpasha</p> <p>CD444 TWO BENCHMARK PROBLEMS FOR TESTING ACCURACY AND STABILITY OF FINITE ELEMENT SOLUTIONS TO WAVE PROPAGATION D. Gabriel, J. Plesek, R. Kolman, F.Vales, M. Ulbin</p> <p>CD376 EDT: AN ELASTODYNAMICS TOOLBOX FOR MATLAB M. Schevenels, S. Francois, G. Degrande</p> <p>CD194 ANALYSIS OF EARTHQUAKE INCITEMENT AND APPROXIMATION OF ELASTIC SPECTRUM BY WAVELET TRANSFORM Z. Nikolic, A. Mihanovic, N. Zivaljic</p> | Room 9 |
| Mon 14:30-16:30 | <p>FEM: MODELLING AND SIMULATION – I <i>Chair: P. Diez</i></p> <p>CD372 PERIODIC STEADY STATE RESPONSE OF COMPLEX FINITE ELEMENT MODELS USING MULTI-LEVEL SUBSTRUCTURING C. Theodosiou, K. Sikellis, S. Natsiavas</p> | Room 10 |

CD249 EVALUATION OF RESULTANT PLASTICITY AND FIBER BEAM-COLUMN ELEMENTS FOR THE SIMULATION OF THE 3D NONLINEAR RESPONSE OF STEEL STRUCTURES

S.M. Kostic, F.C. Filippou, Chin-Long Lee

CD443 MODELLING A STRING WITH VARYING LENGTH USING THE FINITE ELEMENT METHOD

K.S. Rogers, N.S. Ferguson, A.A. Perryman, B.R. Mace

CD126 A HIGH-ORDER POLYGONAL ELEMENT IN STRUCTURAL DYNAMICS

C. Song

SE117 ADVANCED TRANSITION ELEMENT FAMILIES FOR ADAPTIVE FINITE ELEMENT ANALYSIS OF ELASTICITY PROBLEMS

D. Wu, K. Y. Sze, S.H. Lo

CD422 VIBRATION AND STABILITY ANALYSIS OF NON PRISMATIC TIMOSHENKO BEAMS ON ELASTIC FOUNDATION

B. Asgarian, M. Soltani

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| Mon 16:30 - 17:00 | Coffee Break |
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| Mon 17:00 - 19:00 | TECHNICAL SESSIONS |
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| Mon 17:00 - 19:00 | MS: NONLINEAR DYNAMICS | Room 1 |
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Minisymposium Organizers: A. Ibrahimbegovic, L. Davenne

Chair: A. Ibrahimbegovic, L. Davenne

CD289 A NEW FIBER ELEMENT FOR REFINED NONLINEAR MODELING OF RC FRAME STRUCTURES IN SEISMIC LOADING

P. Jehel, A. Ibrahimbegovic, P. Leger, L. Davenne

CD107 NONLINEAR DYNAMIC BEHAVIOR OF A PORTAL FRAME UNDER SUPPORT EXCITATION

R.M. Brasil, L.M. Orbolato

CD258 ON THE INFLUENCE OF WARPING, SHEAR AND LONGITUDINAL DISPLACEMENTS ON THE NONLINEAR VIBRATIONS OF BEAMS

S. Stoykov, P. Ribeiro

CD430 IMPLEMENTING AN IMPROVED BOUC-WEN MODEL TO ACCOUNT FOR PLASTICITY POSTULATES

A.E.Charalampakis, V.K. Koumousis

CD187 DYNAMIC FINITE DEFORMATION VISCOELASTICITY IN PRINCIPAL STRETCHES: ENERGY-CONSISTENT TIME INTEGRATION USING MIXED FINITE ELEMENTS

M. Muller, M. Grob, P. Betsch

CD233 IMPACT OSCILLATOR BASED SUSPENSION SYSTEM FOR A REACTION WHEEL

G.S. Aglietti, G. Bianchi, J. Barrington-Brown

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| Mon 17:00 - 19:00 | MS: PROGRESS AND CHALLENGES IN COLLAPSE PREDICTION – II | Room 2 |
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Minisymposium Organizers: H. Krawinkler, F. Zareian

Chair: H. Krawinkler, F. Zareian

CD457 COLLAPSE ASSESSMENT OF A 4-STORY STEEL MOMENT-RESISTING FRAME

D.G. Lignos, H. Krawinkler, A.S. Whittaker

CD481 APPROXIMATE ANALYSIS METHODS AND THE ROLE OF SLABS IN MODELING STRUCTURAL COLLAPSE

E. Williamson, G. Williams, D. Stevens

CD483 EVALUATION OF AN ELEMENT REMOVAL ALGORITHM FOR SHEAR-CRITICAL REINFORCED CONCRETE FRAMES

K.M. Mosalam, S. Park, M. Selim Gunay

CD497 IMPORTANT ISSUES AND SUGGESTED BEST PRACTICES IN SIMULATING STRUCTURAL COLLAPSE DUE TO EARTHQUAKES: MODELING DECISIONS, MODEL CALIBRATION, NUMERICAL SOLUTION ALGORITHMS, AND UNCERTAINTY PROPAGATION

C.B. Haselton, A.B. Liel, G.G. Deierlein

CD508 QUANTIFICATION OF MODELING UNCERTAINTIES FOR COLLAPSE ASSESSMENT OF STRUCTURAL SYSTEMS UNDER SEISMIC EXCITATIONS

F. Zareian, D.G. Lignos, H. Krawinkler

Mon 17:00 - 19:00

MS: STATISTICAL AND PROBABILISTIC METHODS IN COMPUTATIONAL MECHANICS TO TREAT ALEATORY AND EPISTEMIC UNCERTAINTIES IN STRUCTURAL AND/OR GEOTECHNICAL SYSTEMS AND THEIR LOADING ENVIRONMENT – III

Minisymposium Organizers: M. Barbato, J. Conte

Chair: M. Barbato, J. Conte

Room 3

CD216 ESTIMATION OF THE SEISMIC RESPONSE PARAMETERS THROUGH THE EXTENDED INCREMENTAL DYNAMIC ANALYSIS

M. Dolsek

CD131 ADEQUACY OF A SINGLE CONFIDENCE FACTOR TO ACCOUNT FOR EPISTEMIC UNCERTAINTY IN THE SEISMIC ASSESSMENT OF EXISTING STRUCTURES

P. Franchin, P.E. Pinto, P. Rajeev

CD183 PROPAGATION OF EPISTEMIC UNCERTAINTY IN THE FRAGILITY FUNCTION USED FOR BAYESIAN ESTIMATION OF FAILURE PROBABILITY

E.R. Vaidogas, V. Juocevicius

CD103 EXPLORING UNCERTAINTIES IN PROBABILISTIC SEISMIC HAZARD ANALYSIS THROUGH A STOCHASTIC SOURCE-TO-SITE SEISMIC MODEL

C.S. Belsham

CD157 THE ROLE OF UNCERTAINTY IN AEOLIAN RISK ASSESSMENT

F. Petrini, M. Ciampoli, G. Augusti

Mon 17:00 - 19:00

FLUID MECHANICS AND AERODYNAMICS – I

Chair: A. Boudouvis

Room 4

KEYNOTE: SE145 THE COMPUTATION OF HIGH SPEED AERODYNAMIC FLOWS USING UNSTRUCTURED MESH METHODS

K. Morgan, G. Campagne, B.J. Evans, O. Hassan, J. W. Jones, L. Remaki

KEYNOTE: SE123 NUMERICAL SIMULATIONS OF POLYMER EXTRUSION INSTABILITIES

G.C. Georgiou

SE154 ELECTROVISCOUS EFFECTS IN STEADY FLOW OF A SHEAR THINNING CARREAU LIQUID THROUGH A MICROFLUIDIC CONTRACTION

M.R. Davidson, R.P. Bharti, D.J.E. Harvie

SE287 AN OPTIMAL CONTROL METHOD OF COD IN SHALLOW WATER FLOW

O. Kanai, M. Kawahara

Mon 17:00 - 19:00

MS: DYNAMIC EFFECTS ON HIGH-SPEED RAILWAY TRACKS – III

Room 5

Minisymposium Organizers: R. Delgado, R. Calcada

Chair: R. Delgado, R. Calcada

CD480 INFLUENCE OF SOIL NON LINEARITY IN THE DYNAMIC RESPONSE OF HIGH SPEED RAILWAY TRACK

P.A. Costa, R. Calcada, A.S. Cardoso, A. Bodare

CD470 DYNAMIC ANALYSIS OF TRANSITION ZONES ON HIGH SPEED RAILWAY LINES BY EXPLICIT ANALYSIS METHODS

C.A. Ribeiro, T. Dahlberg, R. Calcada, R. Delgado

CD432 NUMERICAL MODELLING OF VIBRATIONS FROM A THALYS HIGH SPEED TRAIN IN THE GROENE HART TUNNEL

S. Gupta, H. Van den Berghe, G. Lombaert, G. Degrande

CD184 A NUMERICAL MODEL TO PREDICT VIBRATIONS DUE TO HST

A. Romero, P. Galvin, J. Dominguez

CD105 THE DYNAMIC EFFECT OF THE TRAIN-BRIDGE INTERACTION ON THE BRIDGE RESPONSE

K. Liu, G. De Roeck, G. Lombaert

Mon 17:00 - 19:00

MS: ACOUSTIC AND STRUCTURAL WAVE TRANSMISSION IN PIPELINES

Room 6

Minisymposium Organizers: S. Sorokin, A. Peplow

Chair: S. Sorokin, A. Peplow

CD385 WAVE PROPAGATION IN AXISYMMETRIC STRUCTURES FROM FINITE ELEMENT ANALYSIS

E. Manconi, B.R. Mace

CD137 ON TRANSMISSION OF VIBRO-ACOUSTIC ENERGY IN SPATIAL ELASTIC PIPING SYSTEMS

S.V. Sorokin

CD561 WAVE PROPAGATION IN HELICALLY WIRE-REINFORCED PIPES

E. Manconi, B.R. Mace, R. Garziera

CD138 MODELING OF SPATIAL FLUID FILLED PIPE SYSTEMS CONTAINING BOTH STRAIGHT AND CURVED SEGMENTS USING BOUNDARY INTEGRAL EQUATIONS

A. Soe-Knudsen

Mon 17:00 - 19:00

STRUCTURAL OPTIMIZATION –CONTROL AND INVERSE PROBLEMS

Room 7

Chair: N. Lagaros

KEYNOTE: SE140 MULTIOBJECTIVE GLOBAL TOPOLOGY OPTIMIZATION FOR STRUCTURES AND MECHANISMS

G.E. Stavroulakis, N. Kaminakis, Y. Marinakis, M. Marinaki

KEYNOTE: SE321 SYNTHESIS OF COMPUTATIONAL STUDIES FOR EARLY DESIGN OF COMPLEX SYSTEMS – AN AIRCRAFT PERSPECTIVE

M.D. Guenov

SE290 STRUCTURAL SIZING OPTIMIZATION WITH LARGE NUMBERS OF DESIGN VARIABLES

D.C. Charnpis, N.D. Lagaros, M. Papadrakakis

SE180 THE STRUCTURAL OPTIMIZATION OF A LOCK NUT USING THE FINITE ELEMENT METHOD AND THE DESIGN OF EXPERIMENTS

KwangYeil Cheong, TaeWon Park, SungPil Jung

SE282 AN IDENTIFICATION METHOD OF GEOLOGICAL BOUNDARIES USING FIRST ORDER ADJOINT EQUATION

M. Chikaraishi, M. Kawahara

Mon 17:00 - 19:00

MASONRY STRUCTURES – I

Room 8

Chair: E. Vintzileou

CD531 NUMERICAL ANALYSIS OF THE MECHANICAL BEHAVIOR UNDER SEISMIC LOADING OF DISCRETE ELEMENT STRUCTURES: APPLICATION TO 3D FRACTURED ROCK MASSES, AND LARGE STONE COURSE BUILDINGS

M.A. Vinche, A. Rafie, C.E. Bohatier

CD536 MECHANICAL BEHAVIOR UNDER SEISMIC LOADING OF MASONRIES INCLUDING NON-CONVEX CONTACT SURFACES

C.E. Bohatier, A. Rafiee, M. Vinches

CD493 NON-LINEAR BEHAVIOR OF UNREINFORCED MASONRY WALLS WITH DIFFERENT IRANIAN TRADITIONAL BRICK-WORK SETTINGS

L. Mirshahzadeh, A.M. Halabian, H. Hashelmol-Hosseini

CD264 STUDY OF QUALITATIVE EFFECTS OF DIFFERENT INFILL TYPES ON SEISMIC RESPONSE MODIFICATION OF RC BUILDINGS

I.S. Idrizi, D.N. Ristic, Z.S. Idrizi

TRANSIENT LOADING

CD507 INVESTIGATION OF INTERACTION BETWEEN HUMAN GAIT AND ELASTIC BRIDGE

M. Valasek, T. Vampola, J. Maca

Mon 17:00 - 19:00

SOIL-STRUCTURE INTERACTION

Room 9

Chair: J. Psycharis

CD254 ASSESSMENT OF THE EQUIVALENT VISCOUS DAMPING RATIO FOR HYBRID WALL-TO-FOUNDATION CONNECTIONS OF PRECAST WALL PANELS

V. Mpampatsikos, D. Bolognini, R. Nascimbene

CD123 ON THE DYNAMIC INTERACTION BETWEEN THE GROUND AND A GROUP OF STRUCTURES SUBJECTED TO SEISMIC DISTURBANCES

K. Uenishi, I.R. Ionescu

CD272 SEISMIC BRIDGE RESPONSE WITH NON-LINEAR SOIL-STRUCTURE INTERACTION

N. Chouw

CD114 EARTHQUAKE RESPONSE ANALYSES OF BUILDINGS CONSIDERING SOIL-STRUCTURE INTERACTION USING ENERGY TRANSMITTING BOUNDARY IN THE TIME DOMAIN

N. Nakamura

CD478 RESPONSE OF BUILDINGS TO GROUND MOVEMENTS: CONSIDERATIONS ABOUT THE NUMERICAL MODELING

S. Arangio, G. Panetta

CD517 OHBA OHASHI PILE-SUPPORTED BRIDGE EXPERIMENT REVISITED: PARADOXES AND NEW INTERPRETATIONS

E. Sakellarakis, G.E. Mylonakis, D.L. Karabalis, K. Syngros, T. Tazoh

Mon 17:00 - 19:00

CONTACT-IMPACT PROBLEMS

Room 10

Chair: G. Degrande

CD407 NUMERICAL PREDICTION OF BLAST-INDUCED WAVE PROPAGATION IN THE SOIL

B. Desmet, J. Vantomme, G. Degrande

CD540 IMPROVING THE DYNAMIC BEHAVIOUR OF ADJACENT BUILDINGS BY CONNECTING THEM WITH FLUID VISCOUS DAMPERS

M.N.S. Hadi, M.E. Uz

CD120 IMPACT LOAD IN PARKING STEEL COLUMN: CODE REVIEW AND NUMERICAL APPROACH

B. Ferrer, S. Ivorra, E. Segovia, R. Irlas

CD231 INTRINSIC DISSIPATION FOR AN ANISOTROPIC 3D DELAY DAMAGE MODEL - APPLICATION TO REINFORCED CONCRETE STRUCTURES UNDER IMPACT LOADINGS

M. Chambart, R. Desmorat, F. Gatuingt, D. Guilbaud

STEEL AND COMPOSITE STRUCTURES – I

CD132 DAMAGE INDEX ASSESSMENT OF SEISMIC-EXCITED COMPOSITE FRAMES

A. Marinopoulou, Z. Dervisi, A. Elenas, C. Kalfas

CD364 ESTIMATION OF SEISMIC RESPONSE IN PLANAR X-BRACED MULTI-STOREY STEEL FRAMES

P.C. Zotos, N. Bazeos

TUESDAY, JUNE 23

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| Tue 8:30 – 10:30 | TECHNICAL SESSIONS |
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| Tue 8:30 – 10:30 | <p>ACTIVE – PASSIVE CONTROL Chair: C. Spyrakos</p> <p>KEYNOTE: CD227 TARGET CONTROL FOR MECHANICAL SYSTEMS DYNAMICS WITH A POSTERIORI ERROR COMPUTATION H. Johansson, K. Runesson</p> <p>CD532 ON THE OPTIMAL TUNING OF TUNED MASS DAMPERS IN STRUCTURAL SYSTEMS E. Rizzi, D. Brescianini, M. Scotti</p> <p>CD371 NEW INVERSE MODEL OF MAGNETORHEOLOGICAL DAMPERS FOR SEMI-ACTIVE APPLICATION ON A 3D BASE-ISOLATED STRUCTURE A. Bahar, F. Pozo, L. Acho, J. Rodellar, A. Barbat</p> <p>CD369 AN EFFICIENT FINITE ELEMENT FORMULATION FOR PASSIVE VIBRATION ATTENUATION USING SHUNT PIEZOELECTRIC PATCHES J.F. Deu, O. Thomas, J. Ducarne</p> | Room 1 |
| Tue 8:30 – 10:40 | <p>MS: SEISMIC SAFETY ASSESSMENT OF STRUCTURES – I Minisymposium Organizers: R. Delgado, R.A. Arede Chair: R. Delgado, R.A. Arede</p> <p>KEYNOTE: CD174 SEISMIC SAFETY OF REINFORCED CONCRETE FRAMED BUILDINGS DESIGNED ACCORDING TO EC-2 AND EC-8 A. H. Barbat, J. C. Vielma, S. Oller</p> <p>CD537 ANTISEISMIC TRADITIONAL ARCHITECTURE ACROSS THE WORLD: STONE, WOOD, CLAY AND BRICK MATERIALS G. Poursoulis</p> <p>CD544 RC HOLLOW-PIER MODELLING AND SHEAR INFLUENCE ON THE CYCLIC NUMERICAL RESPONSE A. Arede, N.V. Pouca, A. Monteiro, P. Delgado, A.I Costa, R. Delgado</p> <p>CD263 DISCONTINUITY OF STRUCTURAL STABILITY DURING EARTHQUAKES N. Gluck, U. Tzadka, R. Farhat</p> <p>CD549 THE TORSION EFFECT ON BUILDINGS SUBJECTED TO SEISMIC LOAD M. D. Bensalah, M. Bensaibi</p> <p>CD707 ARTIFICIAL NEURAL NETWORKS IN COMPUTATIONAL EARTHQUAKE ENGINEERING I.A. Naziris, S. Tsivouraki, N.D. Lagaros, M. Papadrakakis</p> | Room 2 |
| Tue 8:30 – 10:50 | <p>MS: ROBUST STOCHASTIC ANALYSIS, OPTIMAL DESIGN AND MODEL UPDATING OF ENGINEERING SYSTEMS – I Minisymposium Organizers: J. L. Beck, A.A. Taflanidis, H. A. Jensen Chair: J. L. Beck, A.A. Taflanidis, H. A. Jensen</p> | Room 3 |

CD511 A PROBABILISTIC APPROACH TO INVESTIGATE THE UNCERTAINTY PROPAGATION IN WIND ENGINEERING PROBLEMS

F. Petrini, F. Bontempi, M. Ciampoli

CD140 ROBUST STOCHASTIC DESIGN OF VISCOUS DAMPERS FOR BASE ISOLATION APPLICATIONS

A.A. Taflanidis

CD275 BAYESIAN APPROACH TO ORDER SELECTION OF ARX MODELS WITH APPLICATIONS TO STRUCTURAL HEALTH MONITORING

T. Saito, J.L. Beck

CD276 METHOD FOR DETERMINING MARGINS IN MULTIDISCIPLINARY SPACE SYSTEMS DESIGN

D.P. Thunnissen, M.I.J. Magnin, S.K. Au

CD477 BAYESIAN NEURAL NETWORKS TO INVESTIGATE THE EFFECTS OF CORNER RADIUS ON THE PERFORMANCE OF FRP CONFINED COLUMNS

S. Arangio, F. Bontempi

CD720 HORSERACING SIMULATION ALGORITHM FOR EVALUATION OF SMALL FAILURE PROBABILITIES

L.S. Katafygiotis, K.M. Zuev

CD721 MODIFIED METROPOLIS-HASTINGS ALGORITHM WITH DELAYED REJECTION FOR HIGH-DIMENSIONAL RELIABILITY ANALYSIS

K.M. Zuev, L.S. Katafygiotis

Tue 8:30 – 10:30

MS: MODELING AND SIMULATIONS OF DYNAMIC SOIL- STRUCTURE INTERACTION – I

Minisymposium Organizer: B. Jeremic

Chair: B. Jeremic

Room 4

KEYNOTE: CD204 NUMERICAL ANALYSIS AND SEISMIC DESIGN OF SHALLOW TUNNELS IN SOFT ALLUVIAL DEPOSITS

K. Pitilakis, A. Chalatis, G. Tsinidis, E. Kirtas

CD418 SOIL STRUCTURE INTERACTION MODEL FOR COLOSSEO IN ROME IN VIEW OF DYNAMIC CHARACTERIZATION

M. Cerone, G. Valente

CD468 INTEGRATED SOIL-STRUCTURE FRAGILITY ANALYSIS METHOD

A. Hashemi, T. Elkhoraibi

CD370 DYNAMIC RESPONSE OF SDOF SYSTEMS ON SOIL REPLACED WITH SAND/RUBBER MIXTURE

K. Senetakis, A. Anastasiadis, K. Trevelopoulos, K. Pitilakis

CD212 DYNAMIC INTERACTION OF RETAINING WALLS WITH RETAINED SOIL AND STRUCTURES

P.N. Psarropoulos, G. Papazafeiropoulos, Y. Tsompanakis

Tue 8:30 – 10:30

MS: COMPUTATIONAL BIOMECHANICS – I

Minisymposium Organizer: C. Provatidis

Chair: C. Provatidis

Room 5

KEYNOTE: SE288 TOWARDS CLINICAL IMPACT THROUGH COMPUTATIONAL BIOMECHANICS

W.A. Wall, L. Wiechert, A. Comerford, S. Rausch, M.W. Gee, A. Maier

SE278 CREATION OF A PATIENT SPECIFIC FINITE ELEMENT MODEL OF A SPINAL SEGMENT L2-L4 USING TWO WAYS FOR MATERIAL ATTRIBUTION TO THE BONE
C. G. Vossou, C. G. Provatidis

SE314 FINITE ELEMENT ANALYSIS OF SINUS LIFT WITH CANCELLOUS BONE GRAFT BLOCK
P. Schuller-Gotzburg, K. Entacher, A. Petutschnigg, W. Pomwenger, F. Watzinger

SE307 MONITORING OF DAMPING FOR THE ASSESSMENT OF MANDIBULAR BONE QUALITY
S.D. Panteliou, K.A. Lianos, D.A. Sarafianos, C.G. Bilios

SE305 INVESTIGATION OF THE MECHANICAL BEHAVIOR OF TYPICAL SCAPHOID FRACTURES DURING THEIR HEALING PROCESS USING THE FINITE ELEMENT METHOD
F.N. Xypnitos, G.C. Papachristou, N.E. Efstathopoulos, E.N. Kaselouris, D.T. Venetsanos, C.G. Provatidis

Tue 8:30 – 10:30

SOLID AND STRUCTURAL MECHANICS – II
Chair: P. Steinmann

Room 6

KEYNOTE: SE153 AN EFFICIENT MESHLESS FORMULATION FOR ANALYSIS OF SHELL-LIKE STRUCTURES
J. Soric, T. Jarak

SE261 FRAGMENTED ARCHITRAVES RESTORED WITH TITANIUM BARS UNDER BENDING: A PARAMETRIC ANALYSIS OF SOME FACTORS INFLUENCING THE STRESS FIELD
S.K. Kourkoulis, E. Ganniari-Papageorgiou

SE178 DYNAMIC ANALYSIS AND SIMULATION OF THE FLEXIBLE MULTI-BODY MODEL OF THE WIPER SYSTEM
Sung Pil Jung, Tae Won Park, Do Hyun Jung, Won Sun Chung

SE179 ESTIMATION OF THE FACTOR OF WEAR OF A BARREL CAM FOR A PAPER CUP FORMING MACHINE
Kab-Jin Jun, Tae-Won Park, Sung-Pil Jung, Kwang-Yeil Cheong

SE161 GEOMETRIC AND KINEMATIC DETERMINACY OF THREE-DIMENSIONAL TRUSSES
W. Savassi, R. Martins Goncalves, A. Sander C. De Souza

Tue 8:30 – 10:30

MS: COMPUTATION METHODS IN STRUCTURAL ANALYSIS AND FRACTURE MECHANICS – II
Minisymposium Organizer: S. Maksimovic
Chair: S. Maksimovic

Room 7

KEYNOTE: SE104 MODAL STRENGTH REDUCTION (BEHAVIOR) FACTORS FOR SEISMIC DESIGN OF STEEL STRUCTURES
G.A. Papagiannopoulos, D.E. Beskos

SE147 FINITE ELEMENT ANALYSIS OF A SHEAR DEFICIENT REINFORCED CONCRETE BEAM SUBJECTED TO DYNAMIC LOADING
R.A. Hawileh, J.A. Abdalla, M.H. Tanarlan

SE172 APPLICATION OF THE STRONG DISCONTINUITIES APPROACH FOR THE ANALYSIS OF LAMINATED GLASS UNITS
L. Contrafatto

SE135 A FINITE ELEMENT ANALYSIS OF FRACTURED SANDWICH BEAMS IN ASYMMETRIC BENDING

E.E. Theotokoglou, E. Sideridis, I.I. Tourlomousis

SE137 THEORETICAL-NUMERICAL ANALYSIS OF WOODEN SHEAR WALL NAILS SPACING

A.Silva, F.A.R. Gesualdo

Tue 8:30 – 10:30

FLUID MECHANICS AND AERODYNAMICS – II

Chair: K. Morgan

Room 8

SE285 A SHAPE OPTIMIZATION METHOD IN VISCOUS FLOW USING ACOUSTIC VELOCITY AND ORTHOGONAL BASIS BUBBLE FUNCTION

Y. Hikino, M. Kawahara

SE205 LARGE EDDY SIMULATION OF A SQUARE CYLINDER WAKE; TRANSITION FROM 2D TO 3D TURBULENT FLOW

A. Cubero, N. Fueyo

SE176 NUMERICAL SIMULATION OF PARTICLE DEPOSITION AROUND COOLING HOLE OF TURBINE VANE

S. Makita, M. Yamamoto, M. Suzuki

SE175 NUMERICAL INVESTIGATION OF TIP LEAKAGE CONTROL BY JET INJECTION FROM BLADE TIP PLATFORM

N. Miyama, K. Inaba, M. Yamamoto, M. Suzuki

Tue 8:30 – 10:30

MS:THE STOCHASTIC FINITE ELEMENT METHOD: RECENT ADVANCES – I

Minisymposium Organizers: G. Stefanou, V. Papadopoulos, M. Papadrakakis

Chair: G. Stefanou, V. Papadopoulos, M. Papadrakakis

Room 9

SE228 UNCERTAINTY AND PLASTICITY: STOCHASTIC FORMULATION AND COMPUTATIONS

B. V. Rosic, H.G. Matthies, M. Zivkovic, A. Ibrahimbegovic

SE330 EVOLUTIONARY POWER SPECTRUM ESTIMATION OF STRONGLY NARROW-BAND RANDOM FIELDS

D. Schillinger, V. Papadopoulos, M. Papadrakakis

SE108 FUZZY STOCHASTIC FINITE ELEMENT METHOD. DYNAMIC APPROACH

P. Sniady, K. Mazur-Sniady, R. Sieniawska and St. Zukowski

SE233 A COMPUTATIONAL PROCEDURE FOR THE IDENTIFICATION OF RANDOM GEOMETRY IN STRUCTURAL ANALYSIS

G. Stefanou, A. Nouy

SE335 NEURAL NETWORK BASED SUBSET SIMULATION FOR RELIABILITY ANALYSIS

D. Giovanis, V. Papadopoulos, N.D. Lagaros, M. Papadrakakis

SE195 A STOCHASTIC FINITE ELEMENT APPROACH TO THE BUCKLING OF SHELLS WITH RANDOM IMPERFECTIONS

G. Stefanou, V. Papadopoulos, M. Papadrakakis

Tue 8:30 – 10:30

FLUID-STRUCTURE-SOIL INTERACTION

Chair: D. Peric

Room 10

CD188 FINITE ELEMENT FORMULATIONS FOR STRUCTURAL-ACOUSTIC INTERNAL PROBLEMS WITH POROELASTIC TREATMENT

W. Larbi, J.F. Deu, R. Ohayon

CD102 EVALUATION OF THE SEISMIC RESPONSE OF CONICAL STEEL TANKS USING THE EQUIVALENT MODEL TECHNIQUE

A.M.I. Sweedan, A.A. El Damatty

CD213 ANALYTICAL AND NUMERICAL MODELING OF HYDRODYNAMIC DISTRESS OF RIGID AND FLEXIBLE CONCRETE DAMS

G. Papazafeiropoulos, Y. Tsompanakis, P. Psarropoulos

CD214 ITM-BASED FSI-MODELS FOR APPLICATIONS IN ROOM ACOUSTICS

M. Buchschmid, M. Pospiech, G. Muller

CD156 MODELING THE DYNAMIC PROCESS OF TSUNAMI EARTHQUAKE BY LIQUID-SOLID COUPLING METHOD

Yong-en Cai, Zhi-dong Zhao

Tue 10:30 – 11:00

Coffee Break

Tue 11:00 – 13:00

SEMI-PLenary LECTURES

Tue 11:00 – 13:00

Chair: G. Schueller

Room 1

CD360 USING MODEL CLASSES IN SYSTEM IDENTIFICATION FOR ROBUST RESPONSE PREDICTIONS

J.L. Beck

CD495 INFORMATION THEORY FOR STOCHASTIC MODELING OF UNCERTAINTIES IN HIGH DIMENSION. APPLICATION TO A NEW CONSTRUCTION OF THE CHALLENGING INVERSE PROBLEM RELATIVE TO THE GENERATION OF ACCELEROGRAMS ASSOCIATED WITH SRS

C. Soize

SE102 SPARSE REPRESENTATION IN STOCHASTIC MECHANICS

H. G. Matthies, E. Zander

CD388 MODELLING PRODUCT VARIABILITY AND DATA UNCERTAINTY IN STRUCTURAL DYNAMICS ENGINEERING: OVERVIEW OF ACHIEVEMENTS OF THE MC-RTN MADUSE

D.V.H. Vandepitte, B.R. Mace, P. Lardeur

Tue 11:00 – 13:00

Chair: A. Combescure

Room 2

SE334 ON PARTITIONED STRONGLY COUPLED SOLUTION STRATEGIES FOR FLUID-STRUCTURE INTERACTION: ALGORITHMIC BASIS WITH ASSESSMENT OF SOLUTION METHODOLOGIES

D. Peric, W. Dettmer, M. M. Joosten

CD351 DIRECTING ENERGY DISSIPATION IN EARTHQUAKE-SOIL-STRUCTURE SYSTEMS

B. Jeremic

SE152 VIBRATIONS OF STRUCTURES CONTAINING FLUIDS. ELASTOGRAVITY OPERATOR. COMPRESSIBILITY EFFECTS

R. Ohayon, J.S. Schotte

SE171 MELTING OF THERMOPLASTIC MATERIAL WITH THE PARTICLE FINITE ELEMENT

S.R. Idelsohn, E. Onate, R. Rossi, J. Marti

Tue 11:00 – 13:00 Chair: W. Kraetzig

Room 3

CD426 RESONANT DAMPING OF FLEXIBLE STRUCTURES

S. Krenk, J. Hogsberg

SE239 COMPUTATIONAL MODELS FOR THE SIMULATION OF THE FORMING PROCESS OF CARTON PACKAGES

U. Perego

SE323 SHAPE-MEMORY ALLOYS: EFFECTIVE 3D MODELING, COMPUTATIONAL ASPECTS AND BIOMEDICAL DEVICE ANALYSIS

F. Auricchio, M. Conti, S. Morganti, A. Reali, U. Stefanelli

CD454 SEISMIC DESIGN OF INDUSTRIAL FACILITIES

K. Meskouris, B. Holtschoppen, C. Butenweg

Tue 11:00 – 13:00 Chair: J. Oliver

Room 4

SE324 NON SMOOTH CONTACT DYNAMICS ASSESSMENT OF SAFETY CRITICAL BLOCKY ASSEMBLIES

N. Bicanic, T. Koziara

CD152 REDUCTION OF DYNAMIC SYSTEMS AND SUBSYSTEMS

D. Givoli

SE277 NON-INTRUSIVE LOCAL/GLOBAL STRATEGIES FOR SOLVING LARGE PROBLEMS WITH LOCALIZED NONLINEARITIES

O. Allix, L. Gendre, P. Gossel

CD127 STABILIZED FINITE ELEMENT METHODS FOR ELASTIC WAVES

I. Harari, R. Ganel, E. Grosu

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|--------------------------|-------------------|
| Tue 13:00 - 14:30 | Lunch Time |
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| Tue 14:30 – 16:30 | TECHNICAL SESSIONS |
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Tue 14:30 – 16:30 MS: FANAS SYMPOSIUM ON MODELLING FRICTION AND ADHESION AT THE NANOSCALE – II

Room 1

Minisymposium Organizers: P. Decuzzi, G. Carbone

Chair: P. Decuzzi, G. Carbone

SE294 EXPERIMENTAL AND THEORETICAL INVESTIGATION OF THE HARDNESS AND FRICTION PERFORMANCE OF B-N-C FILMS

M.F. Genisel, S. Ilday, B. Baykal, R. Ovali, O. Gulseren, E. Bengu

SE250 BROKEN CHIRAL SYMMETRY IN NANOTUBE SLIDING

X.H. Zhang, G.E. Santoro, U. Tartaglino, E. Tosatti

SE258 LEAKAGE MECHANISM IN FLAT SEALS

F. Botiglione, G. Carbone, G. Mantriota

SE257 SUPERHYDROREPELLENT MICROSTRUCTURED SURFACES: ASSESSMENT AND DESIGN CRITERIA
L. Afferrante, G. Carbone

SE256 THEORY OF RUBBER FRICTION FOR ANISOTROPIC ROUGH SURFACES
G. Carbone, B. Lorenz, B.N.J. Persson, A. Wohler

SE255 CONTACT MECHANICS OF 1D ROUGH SURFACE: COMPARISON BETWEEN NUMERICAL RESULTS AND THEORETICAL MODELS
G. Carbone, M. Scaraggi, U. Tartaglino

Tue 14:30 – 16:30

MS: SEISMIC SAFETY ASSESSMENT OF STRUCTURES – II
Minisymposium Organizers: R. Delgado, R.A. Arede
Chair: R. Delgado, R.A. Arede

Room 2

CD230 DYNAMIC INTERACTION BETWEEN MERCHANDIZES AND SUPPORTING STRUCTURE IN STEEL STORAGE RACKING SYSTEM
H. Degee, V. Denoel

CD228 INTRODUCTION OF FRAGILITY SURFACES FOR A MORE ACCURATE MODELING OF THE SEISMIC VULNERABILITY OF REINFORCED CONCRETE STRUCTURES
P. Gehl, D. Seyedi, J. Douglas, M. Khair

CD217 ESTIMATION OF THE SEISMIC RISK WITH CONSIDERATION OF CAPACITY DEGRADATION OVER TIME
D. Celarec, M. Dolsek, D. Vamvatsikos

CD200 THE EFFECT OF DIAPHRAGM WAVE PROPAGATION ON THE ANALYSIS OF POUNDING STRUCTURES
G.L. Cole, R.P. Dhakal, A.J. Carr, D.K. Bull

CD367 A NONLOCAL MATERIAL MODEL FOR PREDICTING DAMAGE IN STEEL STRUCTURES UNDER SEISMIC EXCITATION
J.Velde, U. Kowalsky, D. Dinkler

CD704 OPTIMUM BUILDING DESIGN BASED ON ENERGY DISSIPATION
C.C. Mitropoulou, N.D. Lagaros, M. Papadrakakis

Tue 14:30 – 16:30

COMPUTATIONAL METHODS IN GEOTECHNICAL EARTHQUAKE ENGINEERING– I
Chair: K. Pitilakis

Room 3

KEYNOTE: CD547 NONLINEAR INELASTIC SEISMIC RESPONSE OF SLENDER BRIDGE PIER ON SURFACE FOUNDATION
G. Gazetas, G. Anastasopoulos, M. Loli, N. Gerolymos

KEYNOTE: CD535 ON THE NUMERICAL MODELING OF GROUND AND FOUNDATION PERFORMANCE UNDER SEVERE SEISMIC SHAKING AND LIQUEFACTION
G. Bouckovalas, K.I. Andrianopoulos, A.G. Papadimitriou

CD209 MITIGATING THE EFFECTS OF FAULT RUPTURE
V. Zania, Y. Tsompanakis, P. Psarropoulos

CD541 NONLINEAR GROUND AND STRUCTURAL RESPONSE VARIABILITY DUE TO SOIL RESPONSE MODELING UNCERTAINTY
Wei Li, D. Assimaki, M. Fragiadakis

CD702 OPTIMALLY DESIGNED PILE FOUNDATIONS
C. Letsios, N.D. Lagaros, M. Papadrakakis

- Tue 14:30 – 16:40 MS: COMPUTATIONAL METHODS FOR WAVES – I** **Room 4**
Minisymposium Organizers: D. Givoli, I. Harari
Chair: D. Givoli, I. Harari
- KEYNOTE:** CD330 PHONONIC BAND GAPS IN 2D FINITE MEDIA USING INERTIAL AMPLIFICATION
 G.M. Hulbert, C. Yilmaz
- CD202 WAVE MODELING BY A DIRECT DISCRETE FORMULATION
 G. Seriani, E. Tonti
- CD148 HIGH-ORDER ABSORBING BOUNDARIES: RECENT EXTENSIONS AND IMPROVEMENTS
 D. Givoli, T. Hagstrom, A. Mar-Or, E. Becache
- CD125 A HIGH-ORDER DOUBLY ASYMPTOTIC OPEN BOUNDARY CONDITION FOR SCALAR WAVES IN A WAVEGUIDE
 S. Prempramote, C. Song
- CD236 A NEW DISCONTINUOUS GALERKIN SOLUTION METHODOLOGY FOR SOLVING HELMHOLTZ PROBLEMS
 M. Grigoroscuta, M. Amara, R. Djellouli
- CD406 AN EFFICIENT WAVE BASED MODELLING APPROACH FOR THE STEADY-STATE DYNAMIC ANALYSIS OF TWO-DIMENSIONAL SOLIDS WITH HOLES
 B. Van Genechten, K. Vergote, D. Vandepitte, W. Desmet
- Tue 14:30 – 16:50 MS: IDENTIFICATION METHODS IN STRUCTURAL DYNAMICS – III** **Room 5**
Minisymposium Organizers: C. Papadimitriou, I. Au
Chair: C. Papadimitriou, I. Au
- KEYNOTE:** CD207 IDENTIFICATION OF NON-LINEAR AEROELASTIC MODELS FROM EXPERIMENTAL DATA: METHODS AND APPLICATIONS
 C.L. Bottasso, F. Luraghi, G. Maisano
- KEYNOTE:** CD166 EXPLORING THE LIMITS AND EXTENDING THE BORDERS OF STRUCTURAL HEALTH MONITORING
 G. De Roeck, E. Reynders
- CD300 FINITE ELEMENT MODEL UPDATING OF AN EXPERIMENTAL VEHICLE MODEL USING MEASURED MODAL CHARACTERISTICS
 D. Giagopoulos, E. Ntotsios, C. Papadimitriou, S. Natsiavas
- CD106 A SIMPLIFIED ENERGY METHOD FOR ACOUSTIC SOURCES IDENTIFICATION
 S. Besset, M. Ichchou, M. Chabchoub, L. Jezequel
- CD179 DYNAMIC CHARACTERISTICS OF A TALL BUILDING DURING TYPHOONS
 Sui-Kui Au, Hing-Lun Yip, Heung-Ming Chow
- CD324 IDENTIFICATION OF THE DAMAGE EVOLUTION IN A BENCHMARK STEEL-CONCRETE COMPOSITE STRUCTURE DURING PSEUDO-DYNAMIC TESTING
 O.S. Bursi, R. Seravolo, G.V. Demarie, S. Erlicher, M. Molinari, L.Z. Fragonara
- Tue 14:30 – 16:30 MECHANICS OF MATERIALS – I** **Room 6**
Chair: A. Giannakopoulos
- KEYNOTE:** SE141 OPTIMISATION AND PARAMETER ESTIMATION IN HYBRID LAMINATED SANDWICH COMPOSITE STRUCTURES
 A.L. Araujo, C.M. Mota Soares, Carlos A. Mota Soares, J. Herskovits

SE286 MECHANICAL MODELLING OF WOVEN FABRICS USING A HOMOGENIZATION METHOD

A.E. Kallivretaki, S.G. Vassiliadis, C.G. Provatidis

SE291 FABRIC DRAPE SIMULATION USING FEM

C.G. Provatidis, A.E. Kallivretaki, S.G. Vassiliadis

SE249 CHARACTERIZATION OF CELLULAR MATERIALS USING COMPUTATIONAL SIMULATIONS

M. Vesenjak, Z. Ren

Tue 14:30 – 16:30 MS: COMPUTATION METHODS IN STRUCTURAL ANALYSIS AND FRACTURE MECHANICS – III Room 7
Minisymposium Organizers: S. Maksimovic
Chair: S. Maksimovic

SE269 TOTAL FATIGUE LIFE COMPUTATION OF NOTCHED STRUCTURAL COMPONENTS USING CYCLIC MATERIAL PROPERTIES

S. Posavljak, K. Maksimovic

SE238 FINITE ELEMENT SIMULATION OF TENSILE TESTS INCLUDING NECKING AND A LOCAL APPROACH MODEL FOR FRACTURE

P.F. Mueller, P. Spatig

SE214 STUDY OF SUPERFICIAL STRESS GRADIENTS BY COMPUTER SIMULATION AND X-RAY DIFFRACTION EXPERIMENT

J.T. De Assis, V.I. Monine, S.M. Iglesias

SE298 FREE VIBRATION ANALYSIS OF THE LAMINATED CURVED GLASS BEAMS

M.Z. Asik, G. Bayar

SE115 LARGE DEFLECTIONS OF DEEP BEAMS ON ELASTIC FOUNDATIONS

A.A. Al- Azzawi, D. M. Al-Talaqany

Tue 14:30 – 16:30 MS: COMPUTATIONAL ASSESSMENT OF SEISMIC PERFORMANCE OF MASONRY STRUCTURES – I Room 8
Minisymposium Organizers: L. Gambarotta, B. Shing
Chair: L. Gambarotta, B. Shing

KEYNOTE: CD408 SEQUENTIALLY LINEAR ANALYSIS AS A PUSHOVER ANALYSIS TOOL FOR MASONRY STRUCTURES

J.G. Rots, M.A.N. Hendriks, B. Belletti, M.J. DeJong

CD413 MODELING OF THE DYNAMIC BEHAVIOR OF BRICK VENEER SUBJECTED TO EARTHQUAKE GROUND MOTIONS

H.O. Okail, P.B. Shing, R.E. Klingner, W.M. McGinley

CD546 SEISMIC PERFORMANCE OF UNREINFORCED AND CONFINED MASONRY STRUCTURES: SHEAR RESISTANCE AND DISPLACEMENT CAPACITY

M. Tomazevic

CD226 2D MODELING OF DRY JOINT MASONRY WALLS REGARDED AS ANISOTROPIC CONTINUOUS MEDIA UNDER HORIZONTAL BODY FORCES

G. De Felice, A. Amorosi, M. Malena

CD459 LATERAL STRENGTH OF MULTI-STOREY MASONRY WALLS WITH OPENINGS AND REINFORCEMENTS

M. Como

Tue 14:30 – 16:30 MS: COMPUTATIONAL FLUID MECHANICS – I **Room 9**
Minisymposium Organizer: N. Markatos
Chair: N. Markatos

KEYNOTE: SE322 COMPUTATIONAL FLUID MECHANICS FOR SOLVING ENVIRONMENTAL AND ENERGY PROBLEMS
 N.C. Markatos

SE300 EXPERIMENTAL AND NUMERICAL ANALYSIS OF RADIO CONTROLLED SAILPLANE FLIGHT
 M. Ramsak, L. Skerget, M. Marhl

SE293 CFD TWO SCALE MODEL OF A WET NATURAL DRAFT COOLING TOWER A.
 Klimanek, R.A. Bialecki, Z. Ostrowski

SE268 QUAI-GAS DYNAMIC ALGORITHMS FOR NUMERICAL MODELING OF NON-STATIONARY GAS FLOWS
 T.G. Elizarova

Tue 14:30 – 16:30 BEM MODELLING AND SIMULATION **Room 10**
Chair: D. Beskos

KEYNOTE: SE157 BOUNDARY ELEMENT ANALYSIS OF GENERAL LAMINAR AND TURBULENT FLUID FLOW PROBLEMS
 L. Skerget, J. Ravnik

KEYNOTE: SE136 POST-BUCKLING ANALYSIS OF VISCOELASTIC PLATES WITH FRACTIONAL DERIVATIVE MODELS
 J.T. Katsikadelis, N.G. Babouskos

SE158 COMPARISON OF FAST ALGORITHMS FOR THE SOLUTION OF INTEGRAL EQUATIONS FOR VISCOUS FLUID FLOW
 J. Ravnik, L. Skerget

SE128 COMPOSITE BARS OF ARBITRARY CROSS SECTION IN NONLINEAR ELASTIC NONUNIFORM TORSION OF BY BEM
 E.J. Sapountzakis, V.J. Tsipiras

SE311 A FGM ANALYSIS USING MASSIVELY PARALLEL DOMAIN DECOMPOSITION BEM
 J.E. Ortiz, V. Mantic, W.A. Shelton, L.J. Gray, F. Paris

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| Tue 16:30 – 17:00 | Coffee Break |
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| Tue 17:00 – 19:00 | TECHNICAL SESSIONS |
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Tue 17:00 – 19:00 FANAS SYMPOSIUM ON MULTISCALE MODELLING OF ADHESION AND FRICTION – III **Room 1**
Minisymposium Organizers: P. Decuzzi, G. Carbone
Chair: P. Decuzzi, G. Carbone

SE241 EXPLORING ATOMIC FRICTION IN NON-CONTACT ATOMIC FORCE MICROSCOPY VIA FLEXURAL AND TORSIONAL RESONANCE
 F. Federici Canova, S. Kaway, T. Glatzel, A.S. Foster, E. Meyer

SE251 EXACTLY QUANTIZED SLIDING OF A CONFINED SOLID LUBRICANT UNDER SHEAR
 A. Vanossi, N. Manini, R. Capozza, I.E. Castelli, G. Divitini, G.E. Santoro, E. Tosatti

SE237 HIGH RESOLUTION NON-CONTACT ATOMIC FORCE MICROSCOPY IMAGING AND NANOMANIPULATION OF AU NANOCCLUSERS ON THIN MGO FILMS

T. Hynninen, M. Bielezki, T. Soini, C. Barth, F. Esch, A. S. Foster, U. Heiz

SE232 WHEN LE CHATELIER FIGHTS SUPERLUBRICITY

M. Urbakh, A. E. Filippov, M. Dienwiebel, J. W.M. Frenken, J. Klafter

SE280 AFM-BASED INVESTIGATION TO AU NANOCCLUSER ADHESION

G. Paolicelli, M. Rovatti, A. Vanossi, S. Valeri

SE292 ON THE ADHESIVE DYNAMICS OF NANO-SIZED PARTICULATE SYSTEMS IN LAMINAR FLOWS

S.Y. Lee, F. Gentile, M. Ferrari, P. Decuzzi

Tue 17:00 – 19:00

MS: SEISMIC SAFETY ASSESSMENT OF STRUCTURES – III

Room 2

Minisymposium Organizers: R. Delgado, R.A. Arede

Chair: R. Delgado, R.A. Arede

CD472 EC8-BASED SELECTION AND SCALING OF ACCELEROGRAMS FOR ASSESSMENT OF THE RESPONSE OF A 5-STORY, IRREGULAR R/C BUILDING A.

A. Sextos, E. Katsanos, A. Georgiou, G. Manolis

CD409 DAMAGE-BASED DESIGN EARTHQUAKE LOADS FOR SDOF INELASTIC STRUCTURES

A. Moustafa, I. Takewaki

CD328 A SET OF VULNERABILITY CURVES FOR SEISMIC RISK ASSESSMENT OF CURRENT BUILDINGS IN URBAN ZONES OF IRAN

C. Negulescu, D. Seyedi, M. Mohammadi-Nasr

CD313 SPATIAL COMPONENT ANALYSIS OF 3-D DISPLACEMENT AND STOREY-DRIFT ENVELOPES OF R.C. BUILDINGS UNDER SEISMIC LOADS

S.J. Pardalopoulos, S.J. Pantazopoulou

CD291 SEISMIC ANALYSIS OF A CONCRETE FACE ROCKFILL DAM

Y. Arici, B. Binici

Tue 17:00 – 19:00

MS: ROBUST STOCHASTIC ANALYSIS, OPTIMAL DESIGN AND MODEL UPDATING OF ENGINEERING SYSTEMS – II

Room 3

Minisymposium Organizers: J. L. Beck, A.A. Taflanidis, H. A. Jensen

Chair: J. L. Beck, A.A. Taflanidis, H. A. Jensen

CD177 AN EFFICIENT FIRST-ORDER SCHEME FOR SEARCHING OPTIMAL ROBUST DESIGNS

H.A. Jensen, G.I. Schueller, M.A. Valdebenito, D.S. Kusanovic

CD414 EVIDENCE-BASED IDENTIFICATION OF WEIGHTING FACTORS IN BAYESIAN MODEL UPDATING USING MODAL DATA

B. Goller, J.L. Beck, G.I. Schueller

CD197 STRUCTURAL DYNAMICS UNDER CONSIDERATION OF IMPRECISE PROBABILITY

J.U. Sickert, W. Graf, F. Steinigen

MS:THE STOCHASTIC FINITE ELEMENT METHOD: RECENT ADVANCES – II

Minisymposium Organizers: G. Stefanou, V. Papadopoulos, M. Papadrakakis

Chair: G. Stefanou, V. Papadopoulos, M. Papadrakakis

SE212 STOCHASTIC ELASTIC-PLASTIC FINITE ELEMENT METHOD

B. Jeremic, K. Sett

SE167 RELIABILITY ASSESSMENT FOR STRUCTURES WITH NON-GAUSSIAN
PARAMETER FIELDS

C. Proppe

CD154 IMPORTANCE SAMPLING USING ADAPTED PROCESS FOR HYSTERETIC
STRUCTURES

S.K. Au

Tue 17:00 – 19:00

MS: COMPUTATIONAL METHODS FOR WAVES – II

Minisymposium Organizers: D. Givoli, I. Harari

Chair: D. Givoli, I. Harari

Room 4

CD235 COMPUTING THE INTERACTION BETWEEN ULTRASONIC WAVES AND
NON-HOMOGENEOUS ADHESION INTERFACES IN LAYERED PLATES

R. Leiderman, D.A.Castello, J.C.Barra, F.A.Rochinha, P.E.Barbone, A.M.B.Braga

CD420 A GEOMETRIC MULTIGRID PRECONDITIONER FOR SOLVING TIME-
HARMONIC ELASTODYNAMICS ON UNBOUNDED DOMAINS WITH PERFECTLY
MATCHED LAYERS

T. Koyama, S. Govindjee

CD160 THE FICTITIOUS DOMAIN METHOD AND APPLICATIONS IN WAVE
PROPAGATION - Part I

E. Becache, J. Rodriguez, C. Tsogka

CD150 THE FICTITIOUS DOMAIN METHOD AND APPLICATIONS IN WAVE
PROPAGATION - Part II

E. Becache, J. Rodriguez, C. Tsogka

CD257 ACCURACY AND STABILITY OF FINITE QUADRATIC SERENDIPITY
ELEMENTS IN DYNAMIC WAVE PROPAGATION PROBLEMS

J. Plesek, R. Kolman, D. Gabriel

CD278 SOME IDEAS ON TIME INTEGRATION FOR THE SIMULATION OF THE
DYNAMIC RESPONSE OF SOFT MATERIALS

R. Ryckman, R. Rangarajan, A. Lew

Tue 17:00 – 19:20

MS: COMPUTATIONAL BIOMECHANICS – II

Minisymposium Organizer: C. Provatidis

Chair: C. Provatidis

Room 5

SE247 2D MULTI-RESOLUTION DOMAIN-BASED MESHING FOR MULTISCALE FE
ANALYSIS OF BONE MICRO-STRUCTURES

L. Podshivalov, A. Fischer, P.Z. Bar-Yoseph

SE299 FINITE ELEMENT ANALYSIS OF THE FUSIFORM SKIN DEFECT

D.A. Eftaxiopoulos

SE254 VALIDATION OF A PERSON SPECIFIC 1D MODEL OF THE SYSTEMIC
ARTERIAL TREE

P. Reymond, Y. Bohraus, F. Perren, D. Rüfenacht, N. Stergiopoulos

SE246 ON THE INVESTIGATION OF A TOTAL HIP ARTHROPLASTY FINITE
ELEMENT MODEL WITH RESPECT TO THE OFFSET CHANGES ACCORDING TO
THE LENGTH OF THE PROFEMUR-E MODULAR NECK

E.G. Theodorou, C.G. Provatidis, P.D. Megas

SE263 ON THE DEFORMATION OF LAMINA CRIBROSA AFTER DECOMPRESSION
SURGERY

S.M. Bauer, E.V. Krakovskaya

SE170 CONFORMAL FLATTENING OF THE CORTICAL SURFACE USING A TOPOLOGICAL AND GEOMETRICAL CUTTING

J.M. Favreau, V. Barra

SE130 DESIGN, NUMERICAL ANALYSIS AND MANUFACTURING OF ARTIFICIAL HIP JOINT IMPLANTS

N.I. Galanis, D.E. Manolakos

Tue 17:00 – 19:00

MECHANICS OF MATERIALS – II

Chair: N. Aravas

Room 6

SE223 EFFECTIVE THERMAL CONDUCTIVITIES OF MULTILAYER PLAIN WEAVE TEXTILE COMPOSITES

J. Vorel, M. Sejnoha

SE199 SIMULATION OF MICROSTRUCTURE EVOLUTION DURING THE ROLLING

D.S. Svyetlichnyy

SE197 CONVERGENCE OF FAST FOURIER TRANSFORM BASED METHOD FOR HOMEGENIZATION OF HETEROGENEOUS MATERIALS: ONE-DIMENSIONAL STUDY

J. Vondrejč, J. Zeman,

SE196 MINIMIZING THE GIBBS EFFECT IN THE MAZ'YA'S SOLUTION TO MECHANICAL FIELDS INSIDE HETEROGENEOUS MEDIA

J. Novak, J. Vondrejč, J. Nemeček

SE156 IDENTIFICATION OF MATERIAL PARAMETERS FROM GRID NANOINDENTATION OF STRUCTURAL MATERIALS

J. Nemeček, K. Forstova, L. Kopecký

SE227 NUMERICAL SIMULATION OF COMPOSITE SLABS IN ELEVATED TEMPERATURES

D. Pantousa, E. Mistakidis,

Tue 17:00 – 19:00

BEM SESSION IN HONOR OF PROF. D.E. BESKOS 65th BIRTHDAY

Session organizers: G. Manolis, D. Polyzos

Chair: G. Manolis, D. Polyzos

Room 7

SE124 THE SINGULAR FUNCTION BOUNDARY INTEGRAL METHOD FOR SINGULAR LAPLACIAN PROBLEMS OVER CIRCULAR SECTORS

E.C. Christodoulou, C. Xenophontos, G.C. Georgiou

SE339 A BOUNDARY ELEMENT METHOD FOR SOLVING 2D AND 3D PROBLEMS IN MINDLIN'S FORM-II GRADIENT ELASTIC THEORY

D. Polyzos, G.F. Karlis

SE338 BOUNDARY ELEMENT PREDICTION OF THE FAILURE RESISTANCE OF TBC SUBJECTED TO THERMO-MECHANICAL LOADING

L.K. Keppas, N.K. Anifantis

SE129 FLEXURAL-TORSIONAL POSTBUCKLING ANALYSIS OF BEAMS OF ARBITRARY CROSS SECTION

E.J. Sapountzakis, J.A. Dourakopoulos

Tue 17:00 – 19:00

NONLINEAR DYNAMICS

Chair: G. Hulbert

Room 8

CD220 CRITICAL ASSESSMENT OF PENALTY-TYPE METHODS FOR IMPOSITION OF TIME-DEPENDENT BOUNDARY CONDITIONS IN FEM FORMULATIONS FOR ELASTODYNAMICS

C.G. Panagiotopoulos, E.A. Paraskevopoulos, G.D. Manolis

CD419 DYNAMIC STABILITY LOSS AND POST-CRITICAL BEHAVIOUR OF AN AUTO-PARAMETRIC NON-LINEAR SYSTEM WITH THREE DEGREES OF FREEDOM

J. Naprstek, C. Fischer

CD139 DYNAMIC ANALYSIS OF RIGID BODIES ON INCLINED PLANE SURFACES: APPLICATION TO PREDICTION OF MERCHANDISE RESPONSE IN STEEL STORAGE RACKS UNDER EARTHQUAKE EXCITATION

P. Sideris, A. Filiatrault

CD421 STABILITY ANALYSIS OF NON-PRISMATIC COLUMNS

B. Asgarian, M. Soltani

CD433 A COMPARATIVE STUDY ON THE RESPONSE OF PRISMATIC AND NON-PRISMATIC TIMOSHENKO BEAMS TO ACCELERATING LOADS

B. Omolofe

CD219 A STATIC METHOD FOR COMPUTATION OF THE TILTING ANGLE OF WORKING VEHICLES

H.U. Marjamaki, J.M. Makinen, A. Fedoroff, R. Kouhia

Tue 17:00 – 19:00

MS: COMPUTATIONAL FLUID MECHANICS – II

Minisymposium Organizer : N. Markatos

Chair: N. Markatos

Room 9

SE264 COMPRESSIBLE COUETTE FLOW FAR FROM LOCAL EQUILIBRIUM

S. Misdanitis, D. Valougeorgis

SE245 NUMERICAL SIMULATION AND MULTI-OBJECTIVE DESIGN OF WING MOTION FOR FLAPPING MICRO AIR VEHICLE

I. Inuzuka, S. Yoshimura

SE244 COMPARISON OF NONLINEAR ALGORITHMS ON PARTITIONED ITERATIVE METHODS FOR FSI PROBLEMS WITH LARGE DEFORMATION

S. Minami, S. Yoshimura

SE163 ADAPTIVE TIME STEP CONTROL FOR THE INCOMPRESSIBLE NAVIER-STOKES EQUATIONS

J. Rang

Tue 17:00 – 19:00

MS: CYCLIC STATICS AND DYNAMICS OF REINFORCED CONCRETE STRUCTURES

Minisymposium Organizer : K.V. Spiliopoulos

Chair: K.V. Spiliopoulos

Room 10

CD568 ROBUST NUMERICAL ANALYSIS OF RC STRUCTURES UNDER CYCLIC DISPLACEMENTS

K.V. Spiliopoulos, G.C. Lykidis

CD389 RETROFITTING REINFORCED CONCRETE STRUCTURES WITH FRP: NUMERICAL SIMULATIONS USING MULTIFIBER BEAM ELEMENTS.

C. Desprez, J. Mazars, P. Kotronis, P. Paultre, N. Roy, M. B-Trudeau

CD500 INFLUENCE OF THE STEEL CONCRETE BOND-SLIP ON THE SEISMIC BEHAVIOR OF RC STRUCTURES

L. Davenne, A. Boulkertous, A. Ibrahimbegovic

CD280 ASSESSMENT OF EFFECTIVE PARAMETERS ON INELASTIC BEHAVIOR OF CFRP WRAPPING COLUMNS USING FINITE ELEMENTS METHOD
F. Danesh, M. Sahrudi

REINFORCED CONCRETE STRUCTURES – II

CD256 NEARB-OPCM3274: SHAKE TABLE TEST OF AN R.C. BUILDING DESIGNED FOR GRAVITY LOADS ONLY, SEISMIC RESPONSE AND FRAME-PANEL INTERACTION
I. Lanese, F.J. Crisafulli, A. Pavese

CD423 EXPERIMENTAL AND NUMERICAL INVESTIGATION OF A REINFORCED CONCRETE BUILDING DESIGNED FOR GRAVITY LOADS ONLY
M. Fragiadakis, I. Lanese, A. Pavese, M. Papadrakakis

WEDNESDAY, JUNE 24

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| Wed 8:30 – 10:30 | TECHNICAL SESSIONS |
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| Wed 8:30 – 10:30 | <p>UNCERTAINTY ANALYSIS IN STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING – I Chair: J. Beck</p> <p>KEYNOTE: CD178 STOCHASTIC SENSITIVITY ANALYSIS: AN ESSENTIAL TOOL FOR OPTIMAL DESIGN OF DYNAMICAL SYSTEMS UNDER UNCERTAIN LOADING H.A. Jensen</p> <p>KEYNOTE: CD503 COLORED NOISE EXCITATION OF ENGINEERING STRUCTURES W. Schiehlen</p> <p>CD245 THE SECONDARY BIFURCATION OF A NOISY AEROELASTIC MODEL C.A. Popescu</p> <p>CD134 A PROBABILISTIC MODEL FOR THE SEISMIC RISK OF BUILDINGS. APPLICATION TO URBAN AREAS A. Aguilar, L. Pujades, A. Barbat, N. Lantada</p> | Room 1 |
| Wed 8:30 – 10:30 | <p>INVERSE PROBLEMS AND SYSTEM IDENTIFICATION Chair: G. Stavroulakis</p> <p>KEYNOTE: CD463 DATA ASSIMILATION IN STRUCTURAL MECHANICS USING DISPLACEMENT FEEDBACK CONTROL P. Le Tallec, D. Chapelle, P. Moireau</p> <p>CD295 IDENTIFICATION OF DYNAMIC MODELS OF METSOVO (GREECE) BRIDGE USING AMBIENT VIBRATION MEASUREMENTS P. Panetsos, E. Ntotsios, N. Liokos, C. Papadimitriou</p> <p>CD382 MODEL VERIFICATION IN DYNAMICS THROUGH STRICT UPPER ERROR BOUNDS J. Waeytens, L. Chamoin, P. Ladeveze</p> <p>CD373 PARAMETER IDENTIFICATION OF LARGE SCALE MAGNETORHEOLOGICAL DAMPERS IN A BENCHMARK BUILDING A. Bahar, F. Pozo, L. Acho, J. Rodellar, A. Barbat</p> <p>CD255 DESIGN OF PIEZOELECTRIC SENSOR NETWORKS FOR STRUCTURAL MONITORING OF FRAME STRUCTURES M. Zellhofer, M. Krommer</p> | Room 2 |
| Wed 8:30 – 10:30 | <p>MS: COMPUTATION METHODS IN STRUCTURAL ANALYSIS AND FRACTURE MECHANICS – IV Minisymposium organizer: S. Maksimovic Chair: S. Maksimovic</p> <p>KEYNOTE: SE326 FINITE ELEMENT ANALYSIS OF DISCRETE CIRCULAR DISCLOCATIONS A. Giannakopoulos, K.P. Baxevanakis</p> | Room 3 |

SE150 IMPLICIT NUMERICAL INTEGRATION OF THE MOHR-COULOMB SURFACE IN PRINCIPAL STRESS SPACE

F.E. Karaoulanis, T. Chatzigogos

SE116 NONLINEAR THREE DIMENSIONAL FINITE ELEMENT ANALYSIS OF REINFORCED CONCRETE BEAMS ON ELASTIC FOUNDATIONS

A.A. Al-Azzawi, A.M. Al-Obaidie

SE276 FATIGUE LIFE ANALYSIS OF CRACKED STRUCTURAL COMPONENTS USING CRACK CLOSURE EFFECTS

S. Boljanovic, S. Maksimovic

SE217 DIFFUSED VS. CONCENTRATED CRACKS IN THE STRONG DISCONTINUITIES APPROACH

M. Cuomo, L. Contrafatto

Wed 8:30 – 10:30

MS: ANALYSIS METHODS FOR BRIDGES SUBJECTED TO SEISMIC ACTIONS – I
Minisymposium organizer: A. Kappos
Chair: A. Kappos

Room 4

KEYNOTE: CD186 GENERALISED FRAGILITY CURVES FOR BRIDGES, FOR ARBITRARY ANGLE OF INCIDENCE

I.F. Moschonas, A.J. Kappos

CD196 SEISMIC VERIFICATION METHOD FOR THIN-WALLED CIRCULAR STEEL BRIDGE PIERS UNDER BI-DIRECTIONAL CYCLIC LOADING

N.G. Kulkarni, A. Kasai

CD307 A 3D NUMERICAL MODELING OF SHEAR EFFECTS ON THE CYCLIC BEHAVIOR OF SQUARE HOLLOW PIERS

P. Delgado, N.V. Pouca, A. Arede, A. Monteiro, A. Costa, R. Delgado

CD314 ADAPTIVE MODAL PUSHOVER ANALYSIS (AMPA) PROCEDURE: APPLICATION TO BRIDGE ANALYSIS

M.N. Aydinoglu, G. Onem

CD319 PERFORMANCE-BASED ANALYSIS OF CONCRETE AND STEEL-CONCRETE COMPOSITE BOX-GIRDER BRIDGES

N. Tondini, O.S. Bursi, B. Stojadinovic

Wed 8:30 – 10:30

MULTIPHYSICS – MULTISCALE PROBLEMS – I
Chair: W. Wall

Room 5

KEYNOTE: SE106 FLUID-SOIL-STRUCTURE INTERACTION: RIGID AND FLEXIBLE, PILE-SUPPORTED PLATFORMS SUBJECTED TO TSUNAMI WAVES

G. D. Manolis, I. Diamatoulaki, D.C. Angelides

KEYNOTE: CD104 MULTISCALE APPROACH WITH UNCERTAINTY FOR NONLINEAR INELASTIC BEHAVIOR OF HETEROGENEOUS MATERIAL AND RELATED SIZE EFFECT

A. Ibrahimbegovic, J. Colliat

SE213 COUPLED 3D FINITE ELEMENT ANALYSIS OF TRANSPORT PHENOMENA IN POROUS MEDIA

S. Dal Pont, F. Meftah, B.A. Schrefler

SE155 DESIGN OPTIMIZATION OF AN ELECTROSTATIC MICROPUMP: A MULTIPHYSICS COMPUTATIONAL APPROACH

E. Bertarelli, R. Ardito, M. Cioffi, K. Lagana, F. Procopio, L. Baldo, A. Corigliano, R. Contro, G. Dubini

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| Wed 8:30 – 10:30 | <p>MS: IMAGE PROCESSING AND DATA VISUALIZATION – I <i>Minisymposium organizers: J.M.R.S. Tavares, C.E. Constantinou</i> Chair: J.M.R.S. Tavares</p> <p>SE296 OBJECT DETECTION USING RGB COLOUR CHANNELS S. Basalamah</p> <p>SE188 A POST-PROCESSING FOR THE REDUCTION OF BLOCKING ARTIFACT IN MOBILE DEVICES D.H. Park, H.H. Park, Y. Kim</p> <p>SE222 IMPLEMENTATION OF WATERSHED ALGORITHM BASED ON CELLULAR AUTOMATA COMBINED WITH ESTIMATION OF 2D FRACTAL DIMENSION L. Rauch, M. Straus</p> <p>SE200 MULTIPLE SCLEROSIS: A MULTIDISCIPLINARY APPROACH TO THE ANALYSIS, 4D MODELING AND SPATIOTEMPORAL SIMULATION OF LESION PATTERN EVOLUTION. R. Marschallinger, S. Golaszewski, J. Kraus, M. Kronbichler, A. Kunz, P. Hofmann</p> <p>SE191 THE MORPHOLOGICAL APPROACH TO GEOMETRICAL MODELLING OF THE DISTAL FEMUR M.D. Trajanovic, N.M. Vitkovic, M.S. Stojkovic, M.T. Manic, S.D. Arsic</p> | Room 6 |
| Wed 8:30 – 10:30 | <p>SEISMIC DESIGN METHODS Chair: C. Spyrakos</p> <p>CD412 EUROCODE 8: COMPARISON OF DIFFERENT METHODS OF ANALYSIS FOR THE ASSESSMENT OF EXISTING R.C. FRAME BUILDINGS V. Mpampatsikos, R. Nascimbene, L. Petrini</p> <p>CD440 ENERGY-BASED ANALYSIS AND DESIGN OF STRUCTURES UNDER SEISMIC LOADING P. Rosko, J. Kralik</p> <p>CD198 COMPARISON OF SEISMIC RESPONSE OF A RC FRAME BUILDING OF OLDER AND MODERN BUILDING PRACTICES M. Rozman, P. Fajfar</p> <p>CD465 DETERMINATION OF ORTHOGONAL COMBINATION COEFFICIENTS USING INELASTIC VELOCITY RESPONSE SPECTRA H. Sesigur, O.C. Celik, F. Cili</p> | Room 7 |
| Wed 8:30 – 10:40 | <p>FEM : MODELLING AND SIMULATION – II Chair: V. Papadopoulos</p> <p>KEYNOTE: SE266 ASSESSING THE ERROR IN THE APPROXIMATION OF THE WAVE NUMBER: STANDARD AND STABILIZED FINITE ELEMENT APPROXIMATIONS OF THE HELMHOLTZ EQUATION L.M. Steffens, N. Pares, P. Diez</p> <p>CD564 A SHEAR-DEFORMABLE FIBER BEAM-COLUMN ELEMENT FOR SEISMIC ANALYSIS OF STEEL STRUCTURES A. Papachristidis, M. Fragiadakis, M. Papadrakakis</p> <p>SE101 FINITE ELEMENT MODELING AND ANALYTICAL SIMULATION OF CIRCULAR GLARE FIBER-METAL LAMINATES SUBJECTED TO LATERAL INDENTATION G.J. Tsamasphyros, G.S. Bikakis</p> | Room 8 |

SE185 LARGE DEFORMATION OBJECT MODELING USING FINITE ELEMENT METHOD AND PROPER ORTHOGONAL DECOMPOSITION FOR HAPTIC APPLICATIONS

Y. Paca, A. Mugan, S. Yesilyurt

SE190 FINITE ELEMENT MODEL FOR PARAMETRIC STUDIES OF TIRE GEOMETRY USING STEADY STATE ROLLING ANALYSIS

N.D. Korunovic, M.D. Trajanovic, M.S. Stojkovic, D.T. Mistic

SE203 STRUCTURAL MODELING OF ARCH DAMS AS A CANTILEVER BEAM RESTING ON A CONTINUOUS ELASTIC FOUNDATION

A. Hashemi, R. Attarnejad

Wed 8:30 – 10:30

MS: PASSIVE SEMI-ACTIVE AND ACTIVE DAMPERS IN CIVIL ENGINEERING – I

Room 9

Minisymposium organizers: R.C. Barros, A. Baratta

Chair: R.C. Barros, A. Baratta

CD572 R&D ON CONTROL OF VIBRATIONS UNDER COVICOCEPAD DURING 2007-2008

R.C. Barros, A.Baratta, O. Corbi, M.B. Cesar, I. Corbi, R. Bairrao, L. Guerreiro, C. Oliveira, C. Magonette

CD487 SEISMIC DESIGN OF BUILDINGS WITH ENERGY DISSIPATION DEVICES

R. Barron, A.G. Ayala

CD181 A SIMPLE APPROACH FOR REALLOCATING VISCOUS DAMPERS IN BUILDING STRUCTURES

L.J. Leu, T.H. Chang, J.T. Chang

CD168 TIME DELAY AND SATURATION CAPACITY INTERACTION IN THE CONTROL OF STRUCTURES UNDER SEISMIC ACTIONS

N.G. Pnevmatikos, C.J. Gantes

CD208 MODEL OF ANALYSIS FOR EARTHQUAKE RESISTANT DUAL SYSTEMS

T. Sophocleous, M.C. Phocas

CD521 VIBRATION REDUCTION OF A STRUCTURE USING VISCOELASTIC DAMPERS INSTALLED BY CABLES

H. Choi, J. Kim

Wed 8:30 – 10:30

MS: MODELING AND SIMULATIONS OF DYNAMIC SOIL- STRUCTURE INTERACTION – II

Room 10

Minisymposium organizers: B. Jeremic

Chair: B. Jeremic

CD269 DYNAMIC THROUGH-THE-SOIL INTERACTION BETWEEN ADJACENT PILED STRUCTURES BY BEM-FEM MODEL

L.A. Padron, J.J. Aznarez, O. Maeso

CD446 ANALYSIS OF SUBWAY INDUCED VIBRATIONS AND INVESTIGATION OF PREVENTIVE MEASURES FOR A BUILDING STRUCTURE

O.L. Ertugrul, B.S. Bakir, S. Akkar

CD456 NONLINEAR RESPONSE OF SUPERSTRUCTURES INFLUENCED BY FREQUENCY-DEPENDENT OSCILLATIONS IN IMPEDANCE FUNCTIONS OF PILE GROUPS EMBEDDED IN A LAYERED SOIL

M. Saitoh

CD182 COUPLED PROBLEMS OF WAVE PROPAGATION IN MATERIALLY INCOMPRESSIBLE SATURATED SOIL BASED ON THE THEORY OF POROUS MEDIA

Y. Heider, B. Markert, W. Ehlers

CD442 A 2.5D COUPLED FE-BE METHODOLOGY FOR THE DYNAMIC INTERACTION BETWEEN LONGITUDINALLY INVARIANT STRUCTURES AND A LAYERED HALFSPACE

S. Francois, M. Schevenels, P. Galvin, G. Lombaert, G. Degrande

CD462 NONLINEAR DYNAMIC ANALYSIS OF EARTH-RETAINING DIAPHRAGM-WALLS

P. Franchin, F. Noto, P.E. Pinto

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| Wed 10:30 – 11:30 | Coffee Break |
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| Wed 11:00 – 13:00 | PLENARY LECTURES – II | Room 1 |
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Chair: S. Idelsohn, R. Ohayon

SE332 MULTISCALE ANALYSIS OF FAILURE

T. Belytschko

CD551 SEISMIC RELIABILITY ANALYSIS OF CORRODED REINFORCED CONCRETE BRIDGE PIERS IN A LIFE-CYCLE PERSPECTIVE

D. Frangopol, M. Akiyama

SE142 HIERARCHICAL MODEL REDUCTION AT MULTIPLE SCALES

J. Fish, Z. Yuan

SE272 ADVANCES IN FINITE ELEMENT PROCEDURES FOR NONLINEAR DYNAMIC RESPONSE

K.J. Bathe

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| Wed 13:00 – 14:30 | Lunch Time |
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| Wed 14:30 – 16:30 | TECHNICAL SESSIONS |
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| Wed 14:30 – 16:30 | MS: UNCERTAINTY AND RELIABILITY IN COMPUTATIONAL STRUCTURAL DYNAMICS – I | Room 1 |
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Minisymposium organizers: C. Soize, G.I. Schueller

Chair: C. Soize, G.I. Schueller

KEYNOTE: CD410 RELIABILITY OF NON-LINEAR SYSTEMS SUBJECTED TO DYNAMIC EXCITATION

H.J. Pradlwarter , G.I. Schueller

CD287 EXPERIMENTAL IDENTIFICATION OF TURBULENT FLUID FORCES APPLIED TO FUEL ASSEMBLIES USING AN UNCERTAIN MODEL AND ESTIMATION OF THE FRETTING-WEAR

A. Batou, C. Soize,

CD566 APPLICATION OF A MODE-BASED META-MODEL FOR THE RELIABILITY ASSESSMENT OF STRUCTURES SUBJECTED TO EARTHQUAKE EXCITATION

L. Pichler, H.J. Pradlwarter , G.I. Schueller

CD350 MODELLING THE VOICE PRODUCTION PROCESS USING A NONPARAMETRIC APPROACH

E. Cataldo, R. Sampaio, C. Soize, J. Lucero

- Wed 14:30 – 16:40 MS: ALGORITHMS AND COMPUTATIONAL TOOLS IN STRUCTURAL DYNAMICS Room 2**
Minisymposium organizer: E. Sotelino
Chair: G. Hulbert
- KEYNOTE:** CD494 THE NEXT GENERATION COMPUTATIONAL TECHNOLOGY FOR NONLINEAR DYNAMICS WITH FINITE DEFORMATION AND CONTACT/IMPACT
 K.K. Tamma
- CD447 REDUCTION AND RECOVERING METHOD OF FRAME STRUCTURES INTO A SINGLE DEGREE OF FREEDOM SYSTEM
 K. Sugiyama, M. Kurata, B.S. Gan, E. Nouchi
- CD428 INCREMENTAL INVERSE ITERATION FOR THE NONLINEAR EIGENVALUE PROBLEM IN STRUCTURAL DYNAMICS
 B. Prabel
- CD466 CONTACT ANALYSIS IN THE MIXED LAGRANGIAN FRAMEWORK
 O. Lavan
- CD151 VIBRATION BEHAVIOUR OF TRUSSES AT CONCEPTUAL DESIGN STAGE, UNDER PEDESTRIAN LOADING AND USING MORPHOLOGICAL INDICATORS
 T. Vandenbergh, W.P. De Wilde
- CD571 AN EFFICIENT DOMAIN DECOMPOSITION FINITE ELEMENT METHOD FOR THE PARALLEL SOLUTION OF POROUS MEDIA PROBLEMS
 G. Stavroulakis, M. Papadrakakis
- Wed 14:30 – 16:30 IRREGULAR STRUCTURES Room 3**
Chair: S. Anagnostopoulos
- KEYNOTE:** CD203 ON SEISMIC ASSESSMENT OF RC BUILDINGS - A CASE STUDY OF AN ACTUAL IRREGULAR STRUCTURE
 M. Kreslin, P. Fajfar
- KEYNOTE:** CD499 AN ANSWER TO A PERSISTING CONTROVERSY IN EARTHQUAKE RESISTANT DESIGN OF ASYMMETRIC BUILDINGS FOR TORSION
 S.A. Anagnostopoulos, C. Alexopoulou, K. Stathopoulos
- CD458 COMPUTATIONAL INVESTIGATION OF SHEAR WALL-FRAME INTERACTION IN STRENGTHENING ACCOUNTING TORSIONAL EFFECTS
 K.A. Korkmaz, F. Demir, H. Tekeli
- CD218 SIMPLE FORMULAS FOR THE ESTIMATION OF MAXIMUM ROTATIONAL RESPONSE OF ONE-STOREY ASYMMETRIC SYSTEMS UNDER SEISMIC EXCITATION
 G. Gasparini, S. Silvestri, T. Trombetti
- CD703 A NEW METHOD FOR ASSESSING TORSIONAL EFFECTS IN IRREGULAR BUILDINGS
 N.P. Bakas, N.D. Lagaros, M. Papadrakakis
- Wed 14:30 – 16:30 MS: ANALYSIS METHODS FOR BRIDGES SUBJECTED TO SEISMIC ACTIONS – II Room 4**
Minisymposium organizer: A. Kappos
Chair: A. Kappos
- CD397 A RESPONSE SPECTRUM METHOD FOR ANALYSIS OF BRIDGES CROSSING FAULTS
 K. Konakli, A. Der Kiureghian

CD195 SEISMIC ASSESSMENT OF BRIDGES WITH DIFFERENT CONFIGURATION, DEGREE OF IRREGULARITY AND DYNAMIC CHARACTERISTICS USING MULTIMODAL PUSHOVER CURVES
T.S. Paraskeva, A.J. Kappos

CD118 SEISMIC ASSESSMENT OF AN OVERPASS BRIDGE WITH A TORSIONAL FUNDAMENTAL MODE
A.J. Kappos, E.D. Goutzika, A.G. Sextos

CD469 ON THE BENEFICIAL ROLE OF PILE AND SOIL INELASTICITY ON THE SEISMIC PERFORMANCE OF BRIDGE PIERS
N. Gerolymos, V. Drosos, G. Gazetas

CD490 SEISMIC VULNERABILITY ASSESSMENT OF THE "DELLA VALLE" VIADUCT
G. Camata, E. Spacone

Wed 14:30 – 16:30 MULTIPHYSICS – MULTISCALE PROBLEMS – II
Chair: G. Manolis

Room 5

KEYNOTE: SE306 THERMO-MECHANICAL MULTISCALE ANALYSIS OF SUPERCONDUCTING CABLES USING THE GENERALIZED SELF CONSISTENT LIKE METHOD
D.P. Boso, M.J. Lefik, B.A. Schrefler

SE303 COMPUTATIONAL MODELING OF NON-LINEAR PROCESSES IN HYDRAULIC FRACTURING
E. Sarris, P. Papanastasiou

SE143 ON BRIDGING DOMAIN METHODS TO COUPLE PARTICLE- AND FINITE-ELEMENT-BASED SIMULATIONS
S. Pfaller, P. Steinmann

SE259 MULTI-SCALE MODELING OF REGULAR OPEN-CELL CELLULAR STRUCTURES BASED ON HOMOGENIZATION PRINCIPLES
L. Krstulovic-Opara, S. Loehnert, M. Vesenjak, D. Mueller-Hoeppe

Wed 14:30 – 16:30 MS: IMAGE PROCESSING AND DATA VISUALIZATION – II
Minisymposium organizer: J.M.R.S. Tavares, C.E. Constantinou
Chair: J.M.R.S. Tavares, C.E. Constantinou

Room 6

SE146 A GRAPHIC ANALYZER AND BUILDER OF SPECTRAL INDEXES BASED ON GROWING SOM
S. Delgado, C. Gonzalo, E. Martinez, A. Arquero

SE215 IMAGE RECONSTRUCTION BY MEANS OF KALMAN FILTERING IN PASSIVE MILLIMETRE-WAVE IMAGING
D.M.P. Smith, P. Meyer, B.M. Herbst

SE103 MEASUREMENT OF WELDING DILUTION FROM IMAGES USING ACTIVE CONTOURS
Pedro Pedrosa Reboucas Filho, Tarique da Silveira Cavalcante, Victor Hugo Costa de Albuquerque, J.M.R.S. Tavares, Paulo Cesar Cortez

SE327 SIMULATION OF VAGINAL WALL BIOMECHANICAL PROPERTIES FROM PELVIC FLOOR CLOSURE FORCES MAP
S. Hasegawa, Y. Yoshida, D. Wei, S. Omata, B. Chen, C.E. Constantinou

SE133 ANALYSIS OF TONGUE SHAPE AND MOTION IN SPEECH PRODUCTION USING STATISTICAL MODELING
M.J.M. Vasconcelos, S.M. Ventura, J.M.R.S. Tavares, D.R.S. Freitas

SE313 A NEW AUTOMATIC IMAGES PROCESSING ALGORITHM FOR DETECTION OF MICROANEURYSMS BASED ON RETINAL IMAGE ANALYSIS
A. Shaeidi

Wed 14:30 – 16:30 SEISMIC ISOLATION – I Room 7
Chair: D. Charmpis

CD250 SEISMIC ISOLATED MULTI-STOREY STRUCTURES OVER THE HEIGHT
G. Pamboris, M.C. Phocas

CD557 CONTROLLING EARTHQUAKE RESPONSE OF MULTI-STOREY BUILDINGS WITH OPTIMIZED CONFIGURATIONS OF SEISMIC ISOLATORS AT VARIOUS ELEVATIONS
D.C. Charmpis, M.C. Phocas, P. Komodromos

CD554 SEISMIC ASSESSMENT OF BASE ISOLATED STRUCTURES USING N2 METHOD
V. Kilar, D. Koren

CD169 SIMULATING THE USE OF RUBBER SHOCK ABSORBERS FOR MITIGATING POUNDINGS OF SEISMICALLY ISOLATED BUILDINGS DURING STRONG EARTHQUAKES
P. Polycarpou, P. Komodromos

CD241 ESTIMATING THE SEISMIC RESPONSE OF BASE ISOLATED BUILDINGS THROUGH A RESPONSE SPECTRUM ANALYSIS PROCEDURE
L. Moussa, M. Aissa

Wed 14:30 – 16:30 FEM : MODELLING AND SIMULATION – III Room 8
Chair: V. Papadopoulos

SE336 EVALUATION STUDY OF THE IMPROVED TRIC SHELL ELEMENT FOR LINEAR AND NONLINEAR STRUCTURAL ANALYSIS
A.G. Gissakis, P. Tsirigas, V. Plevris, M. Papadrakakis

SE111 NUMERICAL SIMULATION OF THE FRONTAL IMPACT CRASH TEST OF A FORMULA STUDENT CAR BODY
G. Belingardi, J. Obradovic

STABILITY OF SHELLS

SE151 EFFECT OF UOE MANUFACTURING PROCESS ON PRESSURE BUCKLING OF THICK-WALLED PIPES
G.E. Varelis, M. Vathi, S. Houliara, S.A. Karamanos

SE105 BUCKLING LOAD OF GRADIENT ELASTIC CIRCULAR CYLINDRICAL SHELLS
S. Papargyri-Beskou, D.E. Beskos

SE265 BUCKLING OF PLATES AND SHELLS WEAKENED WITH CUT-OUTS
A.L. Smirnov, A.V. Lebedev

SE331 STOCHASTIC FEM BASED BUCKLING ANALYSIS OF I-BEAMS WITH RANDOM IMPERFECTIONS
V. Papadopoulos, D. Schilinger, M. Papadrakakis

Wed 14:30 – 16:30 MASONRY STRUCTURES –II Room 9
Chair: C. Bohatier

CD173 INFLUENCE OF NON-STRUCTURAL WALLS AND TIMBER CEILINGS ON THE GLOBAL DYNAMIC BEHAVIOR OF A HISTORIC RESIDENTIAL MASONRY BUILDING

G. Achs, C. Adam

CD266 SEISMIC ASSESSMENT AND REHABILITATION OF HISTORICAL UNREINFORCED MASONRY (URM) BUILDINGS IN ISTANBUL

U. Hancilar, E. Durukal, M. Erdik

CD362 A NON-LINEAR METHOD FOR THE SEISMIC SAFETY VERIFICATION OF MASONRY BUILDINGS

C. Butenweg, C. Gellert, L. Reindl, K. Meskouris

CD344 NEW METHOD FOR MODELING OF ARCH DAMS AS SERIES OF CANTILEVER BEAMS THAT RESTS ON ELASTIC FOUNDATIONS WITH TIME-DOMAIN DAM-RESERVOIR SYSTEM

A. Hashemi, R. Attarnejad

CD548 THE INFLUENCE OF THE SUPPORTING MANNER TO THE DYNAMIC BEHAVIOR OF THE COMPLEX MECHANICAL SYSTEMS

N. Trisovic, T. Maneski, D. Šumarac

Wed 14:30 – 16:30 COMPUTATIONAL METHODS IN GEOTECHNICAL EARTHQUAKE ENGINEERING –II Room 10

Chair: G. Bouckovalas

CD210 SEISMIC RESPONSE OF GEOSYNTHETIC REINFORCED SOIL STRUCTURES

I. Tzavara, V. Zania, Y. Tsompanakis, P.N. Psarropoulos

CD505 INTERACTION OF A LINED TUNNEL WITH THE SURROUNDING NON-LINEAR GROUND DUE TO A VERTICAL SHEAR WAVE

J.R. Maranhã, A. Vieira

CD211 SEISMIC RESPONSE OF SLIDING STRUCTURES

Y. Tsompanakis, V. Zania, P.N. Psarropoulos

CD356 NON LINEAR ANALYSIS OF SOIL LIQUEFACTION PHENOMENA IN THE CARIACO BASIN (VENEZUELA)

F. Lopez-Caballero, D. Marcial, A. Modaressi-Farahmand-Razavi, M. Pardo

CD323 NONLINEAR MACROELEMENTS FOR PERFORMANCE-BASED DESIGN APPLICATIONS OF PILE-SUPPORTED WHARVES

D. Assimaki, V. Varun

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| Wed 16:30 – 17:00 | Coffee Break |
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| Wed 17:00 – 19:00 | TECHNICAL SESSIONS |
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Wed 17:00 – 19:00 MS: UNCERTAINTY AND RELIABILITY IN COMPUTATIONAL STRUCTURAL DYNAMICS – II Room 1

Minisymposium organizers: C. Soize , G.I. Schueller

Chair: C. Soize , G.I. Schueller

CD292 FATIGUE LIFETIME ESTIMATION IN STRUCTURES USING AMBIENT VIBRATION MEASUREMENTS

C. Papadimitriou, C.P. Fritzen, P. Kraemer, E. Ntotsios

CD115 MODELING UNCERTAINTIES FOR LOCAL NONLINEARITIES: APPLICATION TO THE DRILL-STRING DYNAMICS

T.G. Ritto, C. Soize, R. Sampaio

CD378 STOCHASTIC SEISMIC ANALYSIS OF STRUCTURAL SYSTEMS VIBRATING UNDER SPECTRUM COMPATIBLE EXCITATIONS

P. Cacciola, G. Muscolino

CD501 A MONTE CARLO BASED METHOD FOR PREDICTION OF EXTREME RESPONSE STATISTICS OF UNCERTAIN STRUCTURES

N. Saha, A. Naess

CD112 ASSESSMENT AND IMPROVEMENT OF TEST DATA IN SPACECRAFT BASE-DRIVEN SINE VIBRATION TEST

A. Calvi, S. Laborde

Wed 17:00 – 19:00

SEISMIC ANALYSIS OF SPECIAL STRUCTURES

Room 2

Chair: M. Fragiadakis

CD441 FINITE ELEMENT ANALYSIS OF BURIED PIPELINES UNDER SEISMIC-FAULT DISPLACEMENT

P. Vazouras, P. Dakoulas, S.A. Karamanos

CD101 A SIMPLIFIED PROCEDURE TO ESTIMATE BASE SLIDING OF CONCRETE GRAVITY DAMS INDUCED BY AN EARTHQUAKE

M. Basili, C. Nuti

STRUCTURAL OPTIMIZATION

CD434 INVESTIGATION OF THE ROBUSTNESS OF PSO ALGORITHMS IN RELIABILITY OPTIMAL DESIGN PROBLEMS

C. Dimou, V.K. Koumousis

CD574 MULTI-OBJECTIVE STRUCTURAL OPTIMIZATION BASED ON THE PARTICLE SWARM OPTIMIZATION METHOD

V. Plevris, M. Papadrakakis

Wed 17:00 – 19:00

MS: CALIBRATION OF NONLINEAR METHODS OF ANALYSIS FOR SEISMIC ASSESSMENT OF STRUCTURES

Room 3

Minisymposium organizer: E. Spacone

Chair: E. Spacone

KEYNOTE: CD575 POST DAMAGE ASSESSMENT OF THE L' AQUILA, ABRUZZI APRIL 6, 2009 EARTHQUAKE

G. Camata, S. Biondi, G. De Matteis, C. Lai, E. Spacone, I. Vanzi, M. Vasta

CD133 MODELING ISSUES IN NONLINEAR DYNAMIC FINITE ELEMENT ANALYSIS OF STEEL-CONCRETE COMPOSITE FRAME STRUCTURES SUBJECTED TO SEISMIC EXCITATION

A. Zona, M. Barbato, J.P. Conte

CD244 3D IRREGULAR SPEAR BUILDING'S ASSESSMENT USING NONLINEAR STATIC PROCEDURES

C. Bhatt, R. Bento, R. Pinho

CD542 THE IMPACT OF USING SCALED GROUND MOTION RECORDS FOR SEISMIC CAPACITY ASSESSMENT

A. Zacharenaki, M. Fragiadakis, D. Assimaki, M. Papadrakakis

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| Wed 17:00 – 19:00 | <p>UNCERTAINTY ANALYSIS IN STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING – II Chair: G. Stefanou</p> <p>CD460 SEISMOLOGICAL SCENARIO-BASED ENVELOPE FUNCTION FOR STOCHASTIC MODELLING OF SEISMIC SIGNALS S. Sgobba, P.J. Stafford, G.C. Marano</p> <p>CD109 INVESTIGATION OF AUTO-CORRELATION FUNCTION AND MATHEMATIC EXPECTED VALUE TO DETERMINE THE MAXIMUM RESPONSE OF THE STRUCTURE DUE TO RANDOM EARTHQUAKE LOADING A. Mirza, G. Roshan, H. Khalilpasha</p> <p>CD563 STRUCTURAL RELIABILITY ASSESSMENT WITH THE AID OF NEURAL NETWORKS M. Fragiadakis, N.D. Lagaros</p> <p>CD405 RELIABILITY ANALYSIS APPLIED ON LEBANESE SLOPES SUBJECTED TO SEISMIC LOADS D.Y.A. Massih, J. Harb, A.H. Soubra</p> <p>CD552 ADAPTIVE CONCEPTUAL FRAMEWORK FOR SEISMIC VULNERABILITY ASSESSMENT OF REINFORCED CONCRETE BUILDINGS IN PAKISTAN M. Haroon, S.F.A. Rafeeqi, S.H. Lodi</p> <p>CD224 SIMPLIFIED ANALYSIS OF PCBs RESPONSE TO RANDOM VIBRATIONS R. Amy, G.S. Aglietti, G. Richardson</p> | Room 4 |
| Wed 17:00 – 19:00 | <p>MS: COMPUTATIONAL ASSESSMENT OF SEISMIC PERFORMANCE OF MASONRY STRUCTURES – II Minisymposium Organizers: L. Gambarotta, B. Shing Chair: L. Gambarotta, B. Shing</p> <p>CD379 A PREDICTIVE MODEL FOR THE SEISMIC SAFETY ASSESSMENT OF SCHOOL MASONRY BUILDINGS A. Bucchi, A. Aprile, A. Tralli</p> <p>CD305 IN PLANE SEISMIC RESPONSE OF UNREINFORCED MASONRY WALLS: COMPARISON BETWEEN DETAILED AND EQUIVALENT FRAME MODELS C. Calderini, S. Cattari, S. Lagomarsino</p> <p>CD192 SEISMIC SAFETY ANALYSIS OF HISTORICAL MASONRY STRUCTURES USING A DAMAGE CONSTITUTIVE MODEL Juan Murcia-Delso, Ajoy Kumar Das, Pere Roca</p> <p>CD189 A COUPLED TWO-SCALE COMPUTATIONAL APPROACH FOR QUASI-BRITTLE OUT-OF-PLANE STRUCTURAL FAILURE B.C.N. Mercatoris, T.J. Massart</p> <p>CD164 A RIGID BODY SPRING MODEL FOR THE STUDY OF ROCKING MOTION OF MASONRY WALLS F. Pena</p> <p>CD286 NON-LOCAL COMPUTATIONAL HOMOGENIZATION OF PERIODIC MASONRY FOR THE IN-PLANE ANALYSIS OF SHEAR WALLS A. Bacigalupo, L. Gambarotta,</p> | Room 5 |
| Wed 17:00 – 19:10 | <p>REPAIR AND RETROFIT OF STRUCTURES Chair: S.J. Pantazopoulou</p> | Room 6 |

KEYNOTE: CD248 RETROFIT YIELD SPECTRA FOR THE SEISMIC UPGRADING OF EXISTING RC BUILDINGS

G.E. Thermou, S.J. Pantazopoulou, A.S. Elnashai

CD232 FRP SEISMIC RETROFIT FOR INSUFFICIENT LAP-SPLICE: LARGE SCALE TESTING OF RECTANGULAR HOLLOW SECTION BRIDGE PIERS

S. Peloso, A. Pavese

CD185 PZT CONTROL OF EDGE DEBONDING IN DYNAMICALLY LOADED CONCRETE STRUCTURES STRENGTHENED WITH COMPOSITE MATERIALS

C.P. Provdakis, M.E. Voutetaki

CD384 STATIC AND DYNAMIC ANALYSIS OF REVITALISED OFFICE BUILDING FROM 70'S IN POLAND

T.Z. Blaszczynski, J.A. Wdowicki, E.M. Wdowicka

MS: IMAGE PROCESSING AND DATA VISUALIZATION – III

Minisymposium organizers: J.M.R.S. Tavares, C.E. Constantinou

Chair: J.M.R.S. Tavares, C.E. Constantinou

SE216 BUILDING PHOTO-REALISTIC MODELS IN ROBOT ASSISTED RESCUE OPERATIONS

G. Chliveros, L. Alboul

SE189 BEAM HARDENING CORRECTION IN MOUSE BONE MICROTOMOGRAPHY

E. Sales, I. Lima, J.T. De Assis, R.T. Lope

Wed 17:00 – 19:00

SEISMIC ISOLATION – II

Chair: A. Pavese

Room 7

CD229 EXPERIMENTAL PARAMETER CALIBRATION, UNCERTAINTIES PROPAGATION AND PARAMETER SENSITIVITY OF A PHENOMENOLOGICAL MODEL FOR ELASTOMERIC BEARINGS

C. Casarotti, A. Pavese

CD251 ON THE SUITABILITY OF PROPOSED EQUIVALENT LINEAR ELASTIC MODELS FOR MULTI-STORY SEISMICALLY ISOLATED BUILDINGS

E.A. Mavronicola, P. Komodromos

CD193 DESIGN AND INSTALLATION OF TUNED MASS DAMPERS INTO A VERY SLENDER FOOTBRIDGE ACROSS AAGADE IN COPENHAGEN

M. Saberi, C. Von Scholten

CD301 VISUAL AND INSTRUMENTAL MONITORING OF BASE ISOLATED BUILDINGS CONSTRUCTED IN ARMENIA AND EVALUATION OF THE PERFORMANCE OF THEIR ISOLATION SYSTEMS

M.G. Melkumyan

MS: PASSIVE SEMI-ACTIVE AND ACTIVE DAMPERS IN CIVIL ENGINEERING – II

Minisymposium organizers: R.C. Barros, A. Baratta

Chair: R.C. Barros, A. Baratta

CD455 SEISMIC ASSESSMENT OF EXISTING RC STRUCTURES: NON LINEAR ANALYSES OF DIFFERENT BUILDING TYPOLOGIES

L. Berto, P. Simioni, A. Saetta, R. Scotta, R. Vitaliani

CD570 A PARAMETRIC STUDY OF TDM'S FOR REGULAR BUILDINGS UNDER EARTHQUAKES

M.M. Paredes, R.C. Barros, A. Cunha

Wed 17:00 – 19:20 SOLUTION ALGORITHMS AND REDUCED ORDER METHODS
Chair: N. Lagaros

Room 8

SE193 A PARALLEL CO-SIMULATION FOR MULTI BODY SYSTEMS
 M. Friedrich, H. Ulbrich

SE177 EFFICIENT IMPLEMENTATION OF CORDIC ALGORITHM BY USING VHDL
 D.K. Chakrabarty, N.P. Narkhede

SE186 DISCRETE EQUIVALENT SUPER ELEMENT APPROACH TO STRUCTURES
 F. Corbaci, Y. Cunedioğlu, A. Mugan

SE207 INTEGRATION OF NON-SMOOTH SYSTEMS USING TIME-STEPPING BASED
 EXTRAPOLATION METHODS AND DAE SOLVER COMBINED WITH TIME-STEPPING
 R. Huber, H. Ulbrich








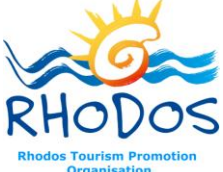
STEEL AND COMPOSITE STRUCTURES – II

CD155 NUMERICAL SIMULATION OF BEHAVIOUR OF GUSSET PLATE
 CONNECTIONS IN CONCENTRICALLY BRACED FRAME UNDER THE CYCLIC
 LOADING
 K.K. Wijesundara, D. Bolognini, R. Nascimbene

SE333 OPTIMUM DESIGN OF STEEL STRUCTURES WITH WEB OPENINGS
 L. D. Psarras, N.D. Lagaros, M. Papadrakakis, Y. Panagiotou

CD705 COMPARATIVE EVALUATION OF THE BEHAVIOR OF STRUCTURAL
 BUILDINGS AGAINST SEISMIC LOADS
 E. Magoula, N.D. Lagaros, M. Papadrakakis

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