

IASS-IACM 2012 – FINAL TECHNICAL PROGRAM

[Sunday, April 1, 2012](#)

17:00-19:00 Registration

[Monday, April 2, 2012](#) (PL=40 min plenary, KL=30 min keynote, L=15 min lecture)

8:30-9:00 Registration

9:00-11:00 Opening Ceremony & Plenary Lectures I [Chair: A. Ibrahimbegovic / M. Zlatar] Amphi

PL: Opening of the 7th International Conference on Computational Mechanics of Spatial Structures

COMPOSITE STRUCTURES WITH LONG FIBER REINFORCEMENT

PL: A. Ibrahimbegovic

MESH GENERATION SYSTEM: 3D BODY WITH CRACKS

PL: M.W. Yuan

11:00-11:30 Coffe-Break

11:30-13:30 Technical Sessions M1 [Organiser / Chair : M. Bischoff/ E. Ramm] Amphi

HIGHLY EFFICIENT SOLID-SHELL FINITE ELEMENT FOR EXPLICIT DYNAMIC ANALYSIS ...

KL: K. Schweizerhof, S. Mattern and C. Schmied

ON THE NUMERICAL ANALYSIS OF SHELL STRUCTURES WITH CONSISTENLY COUPLED ...

KL: W. Wagner and F. Gruttmann

MESHLESS FORMULATION FOR THIN PLATE ANALYSIS

KL: J. Soric, J. Hoster and T. Jarak

ISOGEOMETRIC ANALYSIS OF THIN-WALLED

KL: M. Bischoff and E. Echter

11:30-13:30 Technical Sessions M2 [Organiser / Chair: J. Abel / G. Hofstetter] GF

THE SHELLS OF THE MIAMI STADIUM: SYNERGYE BETWEEN FORM, FORCE AND ENVIRONMENT

L: S. Adriaenssens, R. Hernandez et al...

THE ROLEX LEARNING CENTER AT EPFL LAUSANNE

L: H. Grohmann, K. Bollinger and A. Weilandt

NUMERICAL VERSUS EXPERIMENTAL FAILURE STUDIES OF CONCRETE SHELL STRUCTURES

KL: : G. Hofstetter, B. Valentini and H. Lehar

NEW NUMERICAL ALGORITHMS TO FACILITATE A PRECAST, SEGMENTAL APPROACH ...

L: S. Bagrianski, S. Adriaenssens

ANALYSIS OF REINFORCED CONCRETE SHALLOW CONICAL SHELLS BY THE KINEMATIC ...

L: V. Shugaev

THE STRUCTURAL DESIGN OF THE OCTAGONAL ROOM OF NERO'S DOMUS AUREA ...

L: F.M. Martines, R. Perucchio

COMPUTATIONAL MORPHOGENESIS OF FREE FORM REINFORCED CONCRETE SHELLS ...

L: H. Hamada, H. Komatsu, M. Sasaki and H. Ohmori

11:30-13:30 Technical Sessions M3 [Organiser / Chair: S. Dolarevic / I. Kozar]

AF

MODEL REDUCTION IN FRAME STRUCTURES FOR ZERO AXIAL DEFORMATION

KL: : S. Dolarevic and S. Medic

ELASTO-PLASTIC DESIGN AND SECOND-ORDER ANALYSIS OF STEEL FRAMES

L: E. Mesic

SOLVING THE PROBLEM OF ROD STABILITY ACCORDING TO THE PROGRESSIVE ...

L: Z. Maglajlic

MECHANICAL PROPERTIES AND VISUAL INSPECTION OF FAILURE SURFACES ...

L: E. Krasny

FRACTURE ENERGY, COMPRESSIVE AND FLEXURE STRENGTHS OF RECYCLED ...

L: E. Krasny

MODIFIED FORCE METHOD

L: D. Gavric

FOUNDATION ANALYSIS OF TALL BUILDINGS NEXT TO LOW-RISE BUILDINGS

L: E. Jahic, S. Dolarevic

13:30-14:30 Lunch-Break

LUNCH AREA

14:30-16:30 Technical Sessions M4 [Organiser / Chair: U. Perego/ K. Schweizerhof]

Amphi

SHELL AND SOLID-SHELL FINITE ELEMENT MODELS FOR

KL: M. Pagani and U. Perego

SPECTRAL METHOD FOR MOVING MASS ANALYSIS OF PLATES

KL: I. Kozar and N. Toric-Malic

COUPLED ANALYSIS OF MEMS DEVICES AND ELECTRO-ACTIVE HYDROGELS

KL: I. Sokolov, S. Krylov and I. Harari

ESTIMATION OF DISCRETIZATION ERROR IN PLATE

KL: B. Brank, U. Bohinc and A. Ibrahimbegovic

14:30-16:30 Technical Sessions M5 [Organiser/ Chair : E. Gal / D. Brancherie]

GF

THE EMBEDDED UNIT-CELL APPROACH FOR NON-PERIODIC

KL: E. Gal and M. Grigorovich

A MULTISCALE MODEL FOR THE FINITE ELEMENT ANALYSIS

KL: Y. Zhan and G. Meschke

HOMOGENIZATION PROCEDURE FOR CONCRETE SIMULATED BY LATTICE DISCRETE

L: R. Razakehani, G. Cusatis and E. Gal

APPLYING THE SOLID-SHELL CONCEPT TO THIN FIBRE COMPOSITE STRUCTURES

L: J-W. Simon, B. Stier and S. Reese

HOMOGENIZATION OF MATERIAL HAVING INCLUSIONS

L: E. Gal, E. Suday and H. Waisman

THE BENDING-GRADIENT PLATE THEORY FOR THICK PLATES

L: A. Lebee and K. Sab

14:30-16:30 Technical Sessions M6 [Organiser / Chair: T. Burczynski / P. Villon]

AF

INTELLIGENT OPTIMAL DESIGN OF SPATIAL STRUCTURES

L: T. Burczynski and M. Szczepanik

A REPARAMETERIZATION APPROACH FOR REDUCING DIMENSIONALITY IN SHAPE ...

L: B. Raghavan, P. Breitkopf, and P. Villon

MODELLING AND HOMOGENIZATION OF TECHNICAL TEXTILES

L: S. Fillep, J. Mergheim and P. Steinmann

A FLEXIBLE APPROACH TO OPTIMIZE SINGLE-LAYER GRID STRUCTURES

L: A. Hofmann, C. Preisinger et al.

ELASTO-PLASTIC TRUSS OPTIMIZATION USING GENETIC ALGORITHM

L: H. Wang and H. Ohmori

FORM FINDING OF FREE FORM SHELL STRUCTURES BY USING RESPONSE SURFACE ...

L: M. Liu, M. Xing et al.

EVOLUTIONARY COMPUTATIONAL STRUCTURAL ORNAMENTS: FROM PATTERN FORMATION ...

L: E. Ruffo Calderon Dominguez

FORM FINDING AND ANALYSIS OF FRAMED SHELLS

L: V. Dias de Silva

18:00-19:30 Welcome-Reception (Bosnjacki Institute) [Organiser / Chair: M. Zlatar]

Tuesday, April 3, 2012 (PL=40 min plenary, KL=30 min keynote, L=15 min lecture)

9:00-11:00 Technical Sessions T1 [Organiser / Chair: G.I. Schueller / H.G. Matthies] Amphi

EFFICIENT MODELLING OF THICKNESS IMPERFECTION IN CARBON FIBER

KL: M. Broggi and G.I. Schueller

SYSTEM IDENTIFICATION IN A PROBABILISTIC SETTING

KL: H.G. Matthies

A MODIFICATION OF THE CHOLESKY DECOMPOSITION TO SPEED UP MONTE CARLO

KL: A. Notin, J.L. Dulong and P. Villon

A PROBABILISTIC APPROACH FOR THE DESIGN OF STRUCTURAL MASONRY

L: N. Mojsilovic

A NOVEL COMPRESSION TECHNIQUE OF APERIODIC RANDOM MICROSTRUCTURES

L: J. Novak, A. Kucerova and J. Zeman

9:00-11:00 Technical Sessions T2 [Organiser / Chair: S. Koric / C Zehetner] GF

MULTIPHYSICS MODELING OF STEEL CONTINUOUS CASTING

L: S. Koric, B.G. Thomas et al.

STRUCTURAL LATTICES GENERATED FROM RANDOMLY DISORDERED GRAPHS

L: R. Tarczewski

A THERMO-DAMAGE COUPLING MODEL FOR CONCRETE STRUCTURE

L: V.M. Ngo, A. Ibrahimbegovic and D. Brancherie

INCORPORATING OPTIMIZATION IN THE FORCE DENSITY METHOD FOR THE FORM FINDING ...

L: H. Tamai

CONTROL OF TORSIONAL ROD VIBRATIONS BY PIEZOELECTRIC TRANSDUCERS

L: C. Zehetner, M. Zellhofer and M. Krommer

NECKING LIMITS OF CONOID MEMBRANE STRUCTURES WITH VARIABLE STRESS RATIO

L: S. Gellin and R.M.O. Pauletti

THE CONSEQUENCES OF ACTION OF LECHATE AND CORROSION IN REINFORCED CONCRETE...

L: Em. Trozic, D. Ceric and En. Trozic

EFFECTS OF LONG-TERM ACTION OF ICES SWELLING, IN THE PROTECTIVE WALL ...

L: Em. Trozic, D. Ceric and En. Trozic

9:00-11:00 Technical Sessions T3 [Organiser / Chair: B.A. Izzuddin / F.G. Rammerstorfer] AF

MECHANICAL CHARACTERIZATION OF WOOD: AN INTEGRATIVE APPROACH ...

KL: K. Hofstetter and J. Eberhardsteiner

MESHLESS LOCAL BUCKLING ANALYSIS OF STEEL BEAMS WITH WEB OPENING

L: A.R.Z. Abidin and B.A. Izzuddin

COMPUTATIONAL TREATMENT OF THE STABILITY OF MULTI-LAYERED CARBON ...

L: F.G. Rammerstorfer, M. Todt, M.A. Hartmann et al.

ROBUSTNESS ANALYSIS OF SPATIAL TIMBER STRUCTURES

L: P.H. Kirkegaard and N. Balfroid

AN EQUILIBRIUM SHELL ELEMENT FOR FOLDED PLATE STRUCTURES

L: E.A.W. Maunder, B. Izzuddin and A.C.A. Ramsay

RIGID-PLASTIC BEAM UNDER IMPACT LOADING

L: A. Khan, L. Smith and B.A. Izzuddin

FREE-FORM DESIGN OF TENSEGRITY STRUCTURES BY DYNAMIC RELAXATION METHOD

L: J.Y. Zhang and M. Ohsaki

11:00-11:30 Coffe-Break

11:30-13:30 Technical Sessions T4 [Organiser / Chair: C. Lazaro / G. Jelenic]

Amphi

NONLINEAR FORMULATION OF SLENDEER RODS BASED ON THE EULER-BERNOULLI MODEL

KL: C. Lazaro, S. Monleon and A. Domingo

THE APPLICATION OF QUATERNIONS TO PROBLEMS OF MORPHOLOGY OF CURVILINEAR BARS

KL: E. Godzinskiy and V. Gordeiev

A NOTE ON RELATIONSHIP BETWEEN FIXED-POLE AND MOVING-POLE

L: G. Jelenic, M. Gacesa and M. Saje

LOCAL STATIC INDETERMINACY, PSEUDO-FORCES AND STRESS EVALUATION IN ...

L: S. Monleon, C. Lazaro and A. Domingo

A MOLECULAR STRUCTURAL MECHANICS (MSM) MODEL FOR THE STATIC BEHAVIOR OF ...

L: R. Merli, C. Lazaro and S. Monleon

ON OBJECTIVITY OF FINITE ROTATION BEAM FORMULATION

L: R. L. Taylor and A. Ibrahimbegovic

11:30-13:30 Technical Sessions T5 [Organiser / Chair : P. Betsch / A. Eriksson]

GF

GEOMETRICALLY EXACT STUCTUREAL MODELS FOR LARGE DEFORMATION

KL: P. Betsch, N. Sanger and C. Hesch

DEPLOYMENT ANALYSIS OF AN ANTIPRISMATIC SNAP-THROUGH TYPE SPACE TRUSS

KL: N. Friedman, K. Gidofalvy, I. Hegedus, G. Farkas, A. Ibrahimbegovic

A NEW ROD MODEL FOR THE FOLDING AND DEPLOYMENT OF TAPE SPRINGS WITH ...

L: E. Picault, S. Bourgeois, B. Cochelin, C. Hochard et al.

3D CONTACT PROBLEMS WITH LARGE LOAD-STEPS BASED ON THE COVARIANT DESCRIPTION

L: R. Izi, A. Konyukhov and K. Schweizerhof

INFLUENCE OF EQUILIBRIUM CURVES INTERACTION ON THE IMPERFECTION SENSITIVITY ...

L: S. Medic, D. Uros and M. Lazarevic

EXPERIMENTAL AND NUMERICAL TESTS OF SOME RC SLABS

L: D. Matešan, J. Radnić

11:30-13:30 Technical Sessions T6 [Organiser / Chair: W. Wagner / I. Harari]

AF

EFFECT OF REINFORCEMENT RATIO ON THE CREEP BUCKLING BEHAVIOR ...

L: Y. Huang and E. Hamed

DYNAMIC ANALYSIS OF FLEXIBLE FALLING ROCK PROTECTION BARRIERS

L: A. Mentani, C. Gentilini, F. Ubertini et al.

ON THE DYNAMIC RESPONSE OF DISCRETE SINGLE-LAYER SPHERICAL DOMES

L: A. Handruleva, V. Matuski and K. Kazakov

COMPARISON OF THREE ALTERNATIVE SOLUTIONS OF AN OVERPASS IN A DEEP CUT

L: H. Mahmutagic, K. Imsirpasic, E. Lakota

SPATIALLY-CURVED COMPOSITE BEAMS: NUMERICAL ANALYSIS AND EXPERIMENTAL ...

L: M.A. Bradford, X. Liu and R.E. Erkmén

NUMERICAL ANALYSIS OF NAILS DRIVEN IN A PYROCLASTIC SILTY SANDS

L: G. Di Fonzo

EFFECTS OF PRE-LOADING ON THE MODAL CONTRIBUTIONS TO THE RESPONSE ...

L: S. Ostovari Dailamani and J.G.A. Croll

TESTING OF RAPIDLY ASSEMBLED LARGE SCALE EMERGENCY SHELTERS

L: E. Saliklis and E. Arens

13:30-14:30 Lunch-Break

14:30-16:30 Plenary Lectures II & Round Table [Chair: H. Mang/ R. Ohayon]

Amphi

DO WE STILL NEED SHELL FORMULATIONS ?

PL: E. Ramm

EFFICIENT COUPLING ALGORITHM FOR FREE-SURFACE FLOW IMPACTING STRUCTURE

L: C. Kassiotis, A. Ibrahimbegovic and H.G. Matthies

ROUND TABLE DISCUSSION:

-What is the role of a structure specialist in the present inter-disciplinary scientific research?

-What is the best educational/ training program for nurturing the next generation of specialists?

17:30-19:00 Visit to Sarajevo Old Town [Organiser / Chair: M. Madzarevic]

19:00-21:00 Banquet - Brusa Bezistan [Organiser / Chair: M. Madzarevic]

[Wednesday, April 4, 2012](#) (PL=40 min plenary, KL=30 min keynote, L=15 min lecture)

9:00-11:00 Technical Sessions W1 [Organiser / Chair: G. Meschke / N. Dominguez] Amphi

EMBEDDED DISCONTINUITIES FOR ULTIMATE LOAD COMPUTATION OF RC FRAMES

KL: D. Brancherie, B.H. Pham, L. Davenne and A. Ibrahimbegovic

NONLINEAR DAMAGE ANALYSIS OF A RC BEAM-COLUMN CONNECTION

KL: N. Dominguez and J. Perez-Mota

COMPUTATIONAL SEQUENTIALLY LINEAR ANALYSIS OF RC PLATES AND SHELLS

L: J. Rots, M.A.N. Hendriks, A.T. Slobbe and A.V. van de Graaf

FAILURE ANALYSIS OF STRUCTURAL ELEMENTS BY EMBEDDED DISCONTINUITY CONCEPT

L: M. Jukic, J. Dujc, A. Ibrahimbegovic and B. Brank

THE ENERGY DISSIPATION IN METAL MEMBRANE UNDER CYCLIC LOADING

L: B. Ayhan, P. Jehel and A. Ibrahimbegovic

SYSTEM IDENTIFICATION AND MODEL UPDATE OBSERVER-KALMAN AND GENETIC ...

L: Z. Lozina, D. Sedlar and D. Vucina

9:00-11:00 Technical Sessions W2 [Organiser / Chair: M. Hrasnica / N. Mojsilovic] GF

PUSHOVER ANALYSIS OF A TYPICAL MASONRY RESIDENTIAL BUILDING IN BOSNIA ...

L: N. Ademovic, M. Hrasnica and M. Zlatar

3D FEM MODEL FOR ASEISMIC ANALYSIS OF THE MASONRY BUILDINGS

L: G. Simonovic and B. Verbic

STRUCTURAL CHALLENGES OF HISTORICAL STONE MASONRY BUILDINGS IN BOSNIA ...

L: M. Hrasnica and S. Medic

NUMERICAL DYNAMIC TESTS OF MASONRY-INFILLED REINFORCED CONCRETE FRAMES

L: G. Baloevic, J. Radnic and A. Harapin

STATIC AND DYNAMIC ANALYSIS OF THE OLD STONE BRIDGE IN MOSTAR

L: J. Radnic, A. Harapin, M. Smilovic et al.

COMPUTER SIMULATION OF CRACK TRAJECTORIES IN CONCRETE

L: H. Jasarevic, S. Gagula, I. Hot

CRACK PATTERN PUSHOVER ANALYSIS VS TIME HISTORY ANALYSIS OF ...

KL: N. Ademovic and M. Hrasnica

9:00-11:00 Technical Sessions W3 [Organiser / Chair: B. Brank / J. Soric] AF

STIFFENED PLATE UNDER THE INFLUENCE OF 3D VEHICLE MODEL

L: N. Toric-Malic and I. Kozar

NUMERICAL MODELLING OF INTERACTION BETWEEN STIFF REINFORCING ELEMENTS ...

L: H. Grubic, A. Skejic and A. Balic

OPTIMIZATION OF AN ORIGINAL STEEL SPACE TRUSS JOINT USING CONTACT ANALYSIS ...

L: T. Vacev

A NOVEL FINITE-ELEMENT-TYPE APPROXIMATION FOR SOLID MECHANICS APPLICATIONS ...

L: M. Selimoti and M.M. Rashid

THE INTRODUCTION OF A NONLINEAR FEM MODEL OF CONNECTIONS INTO A GLOBAL ...

L: I. Imamovic, E. Mesic and E. Hajdo

IEM METHOD - VECTOR INTERACTION

L: E. Mikic

DYNAMICAL ANALYSIS OF STIFFENED PLATES USING THE COMPOUND STRIP METHOD

L: A. Borkovic, N. Mrda and S. Kovacevic

APPLYING THE CONCEPTS OF THE LCA METHODOLOGY ON SPACE STRUCTURES

L: D. Tzourmakliotou

11:00-11:30 Coffe-Break

11:30-13:30 Plenary Lectures III - Closing Ceremony [Chair: M.W. Yuan / A. Ibrahimbegovic] Amphi

VIBRATIONS OF STRUCTURES CONTAINING FLUIDS: SLOSHING AND SURFACE TENSION

PL: R. Ohayon

HIDDEN CONDITIONS FOR BIFURCATION BUCKLING IN A COMPUTATIONAL MECHANICS ...

PL: H. Mang

PL: CLOSING CEREMONY

13:30-14:30 Lunch-Break

19:30-22:00 Appreciation Dinner/ DGfK reception IASS/IACM (only invit.) [Organiser/Chair: F. Biberkic]