

## Thursday 3.12.2009

- 9.15 **Registration and Coffee, Agora, Mattilanniemi 2**  
9.50 **Timo Tiihonen**, University of Jyväskylä, Finland, **Ag Aud 2**  
Welcoming Words (*Chairman Raino Mäkinen*)  
10.00 *Plenary Speaker 1 - Tadeusz Burczynski*, Cracow University of Technology and Silesian University of Technology, Poland, **Ag Aud 2**  
Immune Optimization (*Chairman Jacques Periaux*)  
10.45 *Plenary Speaker 2 - Axel Klawonn*, Universität Duisburg-Essen, Germany, **Ag Aud 2**  
Numerical Simulation of Arterial Wall Models (*Chairman Pekka Neittaanmäki*)  
11.30 **Lunch**

12.30	<b>Structural Mechanics I</b> <i>Chairman Markku Heinisuo</i> <b>P. Kere</b> and <i>M. Lyly</i> A Model for Determining Buckling Limits of Imperfect Cylindrical Composite Shells <b>J. Romanoff</b> and <i>P. Varsta</i> Bending Response of Laser-Welded Web-core Sandwich Deck Structures under Lateral Loads	<b>Ag Aud 2</b>	<b>Numerical Methods I</b> <i>Chairman Reijo Kouhia</i> <b>K. Tabri</b> , <i>J. Broekhuijsen</i> and <i>R. Villavicencio</i> A Comparison of Two Approaches for Ship Collision Simulations: Dynamic Calculations Versus Displacement Controlled Calculations <b>J. Könnö</b> ja <i>R. Stenberg</i> Epäkonforminen elementtimenetelmä Brinkmanin tehtävälle <i>L. Beirão Da Veiga</i> , <b>J. Niiranen</b> and <i>R. Stenberg</i> A Posteriori Error Analysis and Adaptive Computations for Kirchhoff-Love Plate Bending Elements <b>T. Lähivaara</b> , <i>T. Huttunen</i> ja <i>H. Niskanen</i> Elastisten aaltopulssien mallintaminen <b>J. Freund</b> Mesh Generation of Honeycomb Material <b>J. Paavilainen</b> , <i>J. Tuhkuri</i> and <i>A. Polojärvi</i> Multi-Fracture of 2D Beams Modelled with Combined Finite-Discrete Element Method	<b>Ag Alfa</b>	<b>Database Workshop I</b> <b>Jacques Periaux</b> and <b>Pekka Neittaanmäki</b> University of Jyväskylä, Finland Some Words about Open Problems and Innovations  <b>Tuomo Varis</b> University of Jyväskylä, Finland The Finnish Design Database: Technical Details  TA 1: <i>Chairmen Stefan Turek</i> and <i>Mudassar Razzaq</i> TU Dortmund, Germany A Numerical Set-up for Benchmarking and Optimization of Fluid-structure Interaction  TA 2: <i>Chairman Jyri Leskinen</i> University of Jyväskylä, Finland Inverse or Optimization Problems for Multiple (Ellipse) Ellipsoid Configurations	<b>Ag Aud 3</b>
13.30	<b>S. Ehlers</b> Optimisation for Crashworthiness <b>M. Salminen</b> , <i>M. Heinisuo</i> and <i>A. Aalto</i> Shear Buckling of Steel Plates at Elevated Temperatures <b>M. A. Ranta</b> Poranterän kuormittuminen väännön ja puristuksen sekä rotaation alaisena <b>H. Keinänen</b> ja <i>S. Moilanen</i> Tykin ammuksen ja tuliputken vuorovaikutuksen numeerinen laskenta		<b>Laskennallisten tieteiden kansallinen kehittäminen - Workshop</b> <b>Pekka Neittaanmäki</b> Alustus <b>Auri Kaihlavirta</b> Laskennallisten tieteiden kansallinen kehittäminen 2009 nykytilan kartoitus <b>Pekka Neittaanmäki</b> Laskennalliset tieteet Euroopassa Keskustelua	<b>Lea Pulkkinen Sali</b>		

- 14.30 **Coffee**  
15.00 *Plenary Speaker 3 - Mohamed Masmoudi*, University of Toulouse, France, **Ag Aud 2**  
Extended Adjoint Approach in CFD (*Chairman Tadeusz Burczynski*)  
15.45 **Break**

16.00	<b>Applications</b> <i>Chairman Sami Pajunen</i> <b>A. Aronen</b> ja <i>R. Karvinen</i> Karkaistun lasin visuaalisen laadun parantaminen <b>M. Lindstedt</b> , <i>J.-P. Huhtanen</i> ja <i>R. Karvinen</i> Hierrejauhimen virtausmallinnus ja optimointi <b>M. Laitinen</b> and <i>P. Honkalampi</i> Viscoelastic Rolling Contact Model for a Paper Machine Press Nip <b>M. Huotari</b> Photoplethysmographic Techniques for Arterial Stiffness Measurements and Pulse Wave Decompositions with Means of a Physical Model <b>J.-P. Teeriaho</b> , <i>J. Ahola</i> ja <i>K. Nevala</i> Muistimetallitoimilaitteiden mallinnus ja suunnittelu tarkkuusmekaniikkaan <b>P. Varpasuo</b> Seismic Hazard Evaluation for New NPP Sites in Finland Using Different Scaling Parameters	<b>Ag Aud 2</b>	<b>Structural Mechanics II</b> <i>Chairman Juhani Koski</i> <b>A. Fedoroff</b> , <i>R. Kouhia</i> , <i>H. Marjamäki</i> and <b>J. Mäkinen</b> On the Direct Computation of Critical Equilibrium States in Solid and Structural Mechanics <b>A. Fedoroff</b> and <i>R. Kouhia</i> Anomalous Buckling Behaviour of Truss Beams <b>S. Holopainen</b> Tensor's Symmetrization on Metric Spaces and their Applications in Continuum Mechanics	<b>Ag Alfa</b>	<b>Experimental Mechanics and Special Topics on Structural Mechanics</b> <b>Ag Beeta</b> <i>Chairman Petri Kere</i> <b>M. Jokinen</b> , <i>A.-J. Vuotikka</i> ja <i>S.-G. Sjöling</i> Suorassa pyörötangossa etenevän jännitysaallon kokeellinen mittaus <i>M. Honkanen</i> , <i>K. Marjanen</i> and <b>H. Eloranta</b> Development of High-Speed Imaging and Image Analysis Techniques to Measure Extremely Fast Mechanical Processes <i>J. Toivola</i> ja <b>S. Moilanen</b> Tykin ammuksen ja tuliputken vuorovaikutuksen mittausten menetelmä <b>M. Reivinen</b> , <i>E.-M. Salonen</i> and <i>V.P. Vaskelainen</i> Surface Tension Problems with Distributed Torque <i>J. Paavola</i> ja <b>E.-M. Salonen</b> Korvikeleikkauvoimasta <b>A. Oinonen</b> and <i>G. Marquis</i> A Procedure for Damage Modelling of Shear Loaded Structural Hybrid Interfaces	<b>Database Workshop II</b> <b>Ag Aud 3</b> TA 3: <i>Chairmen Matti Nurmi</i> and <i>Petja Sidoroff</i> University of Jyväskylä, Finland Numerical Investigation of Two-dimensional Flow over Darrieus-type Wind Turbine  TA 4: <i>Chairman Peter Råback</i> CSC - IT Center for Science, Finland Optimization of Beam Profile in Fluid-structure Interaction  TI 1: <i>Chairman Jari Jekkonen</i> IT'IS Foundation, Finland MDO of Mobile Phone  TI 2: <i>Chairman Petri Hepola</i> Patria Aerostructures, Finland Patria AST  <i>Chairman Jacques Periaux</i> Part 1: General Discussion: Lessons Learned from Workshop
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18.00

- 19.00 **Dinner at Restaurant Ylistö, Surfontie 9 (YFL-rak.)**

## Friday 4.12.2009

9.00 **Coffee, Agora, Mattilanniemi 2**

9.30 *Plenary Speaker 4 - Kaisa Miettinen*, University of Jyväskylä, Finland, **Ag Aud 2**  
Some Interactive Multiobjective Optimization Methods with Hybrid Ideas (*Chairman Juhani Koski*)

10.15 **Break**

10.30	<b>Optimization</b> <i>Chairman Raino Mäkinen</i> <b>J. Jelovica</b> and <i>A. Klanac</i> 'Healing' and 'Repairing' Techniques for Faster Optimization with Genetic Algorithm <b>K. Mela</b> ja <i>J. Koski</i> Kantavien rakenteiden topologian optimoinnin formuloinnista <b>M. Heinisuo</b> and <i>J. Jalkanen</i> Is the Lightest Steel Structure also the Most Economic? <b>J. Jalkanen</b> ja <i>J. Länsiluoto</i> Puurakenteiden optimointi	<b>Ag Aud 2</b>	<b>Numerical Methods II</b> <i>Chairman Mika Laitinen</i> <b>A. Polojärvi</b> and <i>J. Tuukkuri</i> 3D Discrete Numerical Modelling of Ridge Keel Punch Through Tests <b>K. Fonteyn</b> , <i>E. Pyhäranta</i> , <i>A. Belahcen</i> , <i>P. Rasilo</i> and <i>A. Arkkio</i> Novel Measurement Device for the Investigation of Magnetostriction in Electrical Machinery <b>O. Mali</b> A Posteriori Error Estimates for the Kirchhoff-Love Arch Model <b>I. Anjam</b> , <i>O. Mali</i> , <i>P. Neittaanmäki</i> and <i>S. Repin</i> A New Error Indicator for the Poisson Problem	<b>Ag Alfa</b>	<b>Database Workshop III</b> <b>Lea Pulkkinen Hall</b> Steering group meeting of the Design project
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11.50 **Lunch**

13.00	<b>Material and Fracture Mechanics</b> <i>Chairman Jukka Tuukkuri</i> <i>H. Askes</i> , <i>J. Hartikainen</i> , <i>K. Kolari</i> and <b>R. Kouhia</b> Dispersion Analysis of a Strain-Rate Dependent Ductile-to-Brittle Transition Model <b>T. Saksala</b> Viskoplastis-vauriomekaaninen materiaalmalli kiven rikkoutumisen mallinnukseen kallionporauksessa <b>J. Sjölund</b> and <i>J. Freund</i> Quantification of Geometrical Irregularity of Wood <b>J. Jeronen</b> , <i>N. Banichuk</i> , <i>P. Neittaanmäki</i> and <i>T. Tuovinen</i> On the Effects of Bending Rigidity on the Stability of an Axially Moving Orthotropic Plate <b>R. Rabb</b> Defect Distribution and Fatigue <b>A. Karakoç</b> and <i>J. Freund</i> Effect of Geometrical Features and Scale on Failure Initiation of Wood like Cellular Material	<b>Ag Aud 2</b>	<b>Dynamics and Vibrations</b> <i>Chairman Jari Mäkinen</i> <b>A. Karttunen</b> and <i>R. von Herten</i> Stability Analysis of Rotating Nipped Rolls with Memory <i>R. von Herten</i> and <b>A. Karttunen</b> Unstable Vibrations of Rotating Nipped Rolls with Memory <b>J. Mäkinen</b> , <i>H. Marjamäki</i> ja <i>S. Pajunen</i> Nopeudesta riippuvien hitausvoimatermien vaikutus palkkilaskentaan <b>A.-J. Vuotikka</b> , <i>M. Jokinen</i> ja <i>S.-G. Sjölin</i> Suorassa pyörötangossa etenevän jännitysaallon analysointi FEM:llä <b>A. Huhtala</b> Bayesiläinen lähestymistapa värähtelyperusteiseen rakenteiden kunnonvalvontaan <b>L. Yuan</b> , <i>V. Järvenpää</i> , <i>P. Salmenperä</i> , <i>J. Miettinen</i> and <i>E. Keskinen</i> Dynamic Response and Characteristics of Spectrum in a Contact Vibration Model with Random Input	<b>Ag Alfa</b>	<b>Fluid Mechanics and FSI</b> <i>Chairman Timo Tiihonen</i> <b>E.-M. Salonen</b> and <i>R. Holopainen</i> Use of a Balancing Factor in Ventilation Duct System Flow Analyses <b>A. Karvinen</b> ja <i>H. Ahlstedt</i> Turbulenssimallien vertailu 3D-askelvirtauksen mallinnuksessa <b>T. Lassila</b> and <i>G. Rozza</i> Model Reduction of Steady Fluid-Structure Interaction Problems with Free-Form Deformations and Reduced Basis Methods <i>S. Pajunen</i> , <b>J. Ojala</b> and <i>E. Immonen</i> More Reliable Simulation Results with Fluid-Structure Interaction <b>E. Heikkola</b> Asiakaslähtöiset laskennallisen mekaniikan simulointityökalut	<b>Ag Beeta</b>	<b>Database Workshop IV</b> <b>Ag Delta</b> TAS: <i>Chairman Ning Qin</i> University of Sheffield, UK Shock Control Bump Optimization on a Transonic Laminar Flow Airfoil  <i>Chairman Jacques Periaux</i> University of Jyväskylä, Finland Part 2: General discussion Lessons learned from workshop <i>T. Varis</i> , <i>M. Razzaq</i> , <i>J. Leskinen</i> , <i>P. Sidoroff</i> , <i>P. Råback</i> , <i>Ning Qin</i>
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15.00 **Break**

15.05 *Plenary Speaker 5 - Jean-Antoine Désidéri*, Inria Sophia Antipolis, France, **Ag Aud 2**  
Cooperation and Competition in Multidisciplinary Shape Optimization (*Chairman Kaisa Miettinen*)

15.50 **Closing Words, Ag Aud 2**

16.00