

# OAS2011 Conference Program

## Thursday, August 25th

9.00 – 11.00 **Registration.** J. Liivi 2, foyer

11.00 – 11.15 **Opening.** Room 111.

Conference chair – J. Lellep

Welcome address – vice rector of UT professor K. Haller

11.15 – 12.30 **Opening Session.** Room 111

### Opening Lecture

*Ülo Lepik.* Exploring vibrations of cracked beams by the Haar wavelet method

### Anniversary speeches

12.40 – 14.00 **Lunch**

14.00 – 15.40 **Lecture Session. Modelling & Design I.** Room 405

*M. Mikkola.* Energy Principles of Structural Mechanics from the point of view of Thermodynamics

*A. M. Samsonov, G. Dreiden, I. Semenova, K. Khusnutdinova.* Non-linear guided waves in solids: results and prospects

*A. Salupere.* On pseudospectral method, discrete spectral analysis and solitons

*S. Pilkavičius, R. Kačianauskas.* Influence of material interface between two contacting spherical particles

*V. Goremikins, K. Rocēns, D. Serdjuks.* Rational Geometrical Parameters of Cable Truss for Suspension Bridge

15.40 – 16.00 **Coffee Break**

16.00 – 17.40 **Lecture Session. Topology Optimization.** Room 405

*V. V. Toropov, O. M. Querin, D. Liu.* Topology optimization of a lattice composite fuselage

*P. Coelho, H. Rodrigues, J. Guedes.* Concurrent design of material and structure applied to laminated composites

*J. Šliseris, K. Rocēns.* Rational topology of plywood composite macro-structure

*E. Labans, K. Kalnins.* Optimum design guidelines for plywood sandwich panels

*D. Mačiūnas, R. Belevičius, D. Šešok.* Optimization of grillage structures applying genetic algorithm

## Friday, August 26th

9.00 – 10.40 **Lecture Session. Elastic Structures and Fracture.** Room 405.

*J. Lellep, W. H. Schmidt, P. Nestler.* Optimization of cylindrical shells under dynamic loads

*T. Kraav, J. Lellep.* Elastic buckling of stepped beams with cracks

*E. Kägo, J. Lellep.* Free vibration analysis for cracked stepped strips with various boundary conditions

*J. Polikarpus, J. Lellep.* Bending of annular plates

*J. Lellep, L. Roots.* Non-axisymmetric vibrations of stepped cylindrical shells with cracks

10.40 – 11.00 **Coffee Break**

11.00 – 12.40 **Lecture Session. Inelastic structures.** Room 405.

*J. Lellep, A. Paltsepp.* Optimal locations of stiffeners for inelastic cylindrical shells

*E. Puman.* Optimization of conical shells with cracks

*J. Lellep, B. Vlassov.* Optimization of elastic plastic annular and circular plates

*J. Lellep, E. Tungel.* Optimization of spherical shells made of von Mises materials

*J. Lellep, A. Mürk.* Dynamic plastic behaviour of plates with piece wise constant thickness

*K. L. Verma.* Propagation of thermoelastic waves in composite plates

12.40 – 14.00 **Lunch**

14.00 - 15.40 **Lecture Session. Optimization.** Room 405.

*F. Karaçam and T. Tımarcı.* Optimization of laminated composite beams by use of genetic algorithm

*P. Štemberk, J. Sykorova, J. Bartova.* Optimized Design of Prestressed Concrete Sleeper

*M. Petrik, P. Štemberk.* Design and Realization of Experiment with Shaking Table

*J. Sykorova, J. Bartova, P. Štemberk.* Design of Prestressed Concrete Sleeper with Consideration of Fatigue Effects

*R. Karkauskas, M. Popov.* The optimization algorithm of the inelastic geometrically nonlinear frame structure considering maintenance requirements

15.40 – 16.00 **Coffee Break**

## Friday, August 26th

16.00 – 18.00 **Lecture Session. Modelling II.** Room 405.

*V. Rimša, R. Kačianauskas.* FE simulation of viscoelastic interface between two spherical particles

*S. Upnere, N. Jekabsons, R. Joffe.* Wind loads of RT-16 radio telescope in Irbene, liquid-solid interaction model

*M. Ratassepp, J. Rihma, A. Klauson.* Applying guided waves for the characterization of defects in isotropic plates

*K. Lasn, A. Klauson.* Non-destructive identification of elastic constants by vibration measurements and optimization

*T. Seene, J. Lellep, E. Tungel, P. Kaasik, M. Seene.* Modelling of newborns' strength development

*G. S. Hayrapetyan, S. H. Sargsyan.* Construction of Mathematical Models of Micropolar Anisotropic (Orthotropic) Elastic Thin Plates

19.00 – 22.00 **Conference Dinner** in korp! Sakala House (Tartu, Veski 69)

## Saturday, August 27th

9.00 – 10.40 **Lecture Session. Numerical Methods.** Room 405

*E. Ideon, P. Oja.* Linear/linear rational spline collocation for boundary value problems

*M. Kolk, A. Pedas.* Piecewise Polynomial Collocation for Volterra Integral Equations

*K. Lätt.* The concept of change of variables in finite part integrals with logarithmic factors

*A. V. Yelagin, V. I. Storozhev.* Non-linear second harmonic axisymmetric normal waves of torsion in a cylindrical waveguide of circular section

*L. Feklistova, H. Hein.* Delamination Detection Using Support Vector Machines and Neural Networks

*A. P. Seyranian, A. O. Belyakov.* How to twirl a hula hoop

**Closing**

10.45 – 11.10 **Coffee Break**

11.15 – 14.00 **Guided Walking tour in Tartu**