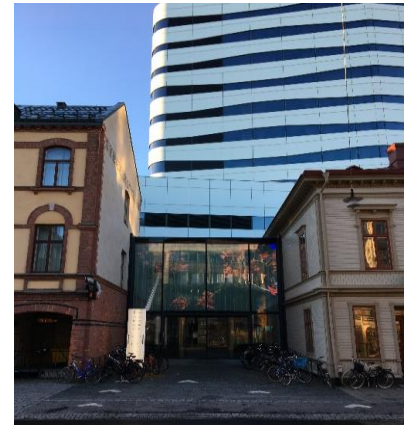


Program of the 31:st Nordic Seminar in Computational Mechanics

Venue: P5 - Conference
Storgatan 46 A, Umeå
Entrance Väven North, 5:th Floor

Free WiFi available (no password)

- Directions:**
1. Enter through the glass door entrance (pictured to the right).
 2. Inside, take the escalators on your left to the 5:th floor.
 3. You are there.



Storgatan 46 A

Thursday 25 October 2018 - Morning

TIME	Room	EVENT	PDF
09.30 - 09.45	6	Opening - Organizers	
09:45 - 10:30	6	Plenary lecture: Microstructure-based modelling and simulation of aluminium structures Odd Hopperstad, NTNU Norway (Chair: Mats G Larson)	link
10:30 - 11:00	Coffee break		
11:00 - 12:40	3	Advanced modeling techniques and applications (Chair: Fredrik Larsson)	
11:00 - 11:20		Dirichlet boundary value correction using Lagrange multipliers - Peter Hansbo	link
11:20 - 11:40		Error estimation for isogeometric analysis of the Stokes equation - Abdullah Abdulhaqe	link
11:40 - 12:00		Computationally efficient modeling of visco-thermal acoustic boundary layers - Martin Berggren	link
12:00 - 12:20		Enhanced one point integration with hourglass control and coarse grid accuracy - Mirza Cenanovic	link
12:20 - 12:40		Least-squares Nitsche and basis removal for cut isogeometric analysis - Karl Larsson	link
11:00 - 12:20	6	Solid mechanics, thin structures, and problems on surfaces (Chair: Mats G Larson)	
11:00 - 11:20		Combining welding simulation and cyclic load analysis for fatigue study of laser welded join - Rami Kokko	link
11:20 - 11:40		A continuum based unified multiaxial low- and high cycle fatigue model - Reijo Kouhia	link
11:40 - 12:00		Integrated fatigue solver for Ansys workbench - Ilkka Väisänen	link
12:00 - 12:20		Evolution equation based high-cycle fatigue model with stress history modelled as stochastic process - Heikki Orelma	link
12:40 - 13:40	Lunch		

Thursday 25 October 2018 - Afternoon

TIME	Room	EVENT	PDF
13:40 - 14:25	6	Plenary lecture: 2D magnetomechanical characterization and modelling of electrical steel sheets Anouar Belahcen, Aalto University Finland (Chair: Fredrik Larsson)	link
14:30 - 16:10	3	Advanced modeling techniques and applications (Chair: Karl Larsson)	
14:30 - 14:50		Slug detection in well-pipeline-riser systems through frequency monitoring - Martin Dalgaard Ulriksen	link
14:50 - 15:10		Molecular dynamics investigation of size distribution of pores in metals at dynamic fracture - Polina N. Mayer	link
15:10 - 15:30		First principle calculation of mechanical load on optical properties of Eu ³⁺ -doped Y ₂ SiO ₅ - Amin Mirzai	link
15:30 - 15:50		Vibration control with electromechanical proof mass absorbers - Jan Høgsberg	link
14:30 - 16:10	6	Solid mechanics, thin structures, and problems on surfaces (Chair: Mathias Wallin)	
14:30 - 14:50		Modelling of the thermo-mechanical behaviour of cross-linked low density polyethylene - Joakim Johnsen	link
14:50 - 15:10		Coated nanoporous structures subjected to stress relief annealing - Yunus O. Yildiz	link
15:10 - 15:30		Study of multibody dynamic simulation software suitability for engine simulation - Terho Tuohineva	link
15:30 - 15:50		Investigation of a gradient enhanced continuum model for a voided material - Ingrid Holte	link
15:50 - 16:20	Coffee break		
16:20 - 18:20	3	Model reduction and multiscale methods (Chair: Mats G Larson)	
16:20 - 16:40		Homogeneous generalized shell element and isogeometric analysis for modelling periodic cellular structures - Viacheslav Balabanov	link
16:40 - 17:00		Incipience of plasticity in perfect crystals at combined volumetric and shear deformation - Alexander E. Mayer	link
17:00 - 17:20		Numerical model reduction of pressure diffusion in fluid-saturated porous media with fractures - Ralf Jänicke	link
17:20 - 17:40		Derivation of micromorphic properties from variationally consistent homogenization of heterogeneous structures - Alexey Khlopotin	link
17:40 - 18:00		Influence of nano-inclusions on tensile strength and shear strength of metallic matrix - Viktor Pogorelko	link
18:00 - 18:20		Divergence conforming isogeometric analysis for reduced order incompressible flow simulations - Trond Kvamsdal	link
16:20 - 18:20	6	Shape and topology optimization (Chair: Martin Berggren)	
16:20 - 16:40		Topology optimization of compliant mechanisms considering strain responses - Bin Niu	link
16:40 - 17:00		Non-linear buckling and topology optimization - Mathias Wallin	link
17:00 - 17:20		A parametrization strategy for shape optimization with isogeometric analysis - Asger Limkilde	link
17:20 - 17:40		Approximating SIMP with a peridynamic model - Anton Evgrafov	link
17:40 - 18:00		Continuous transportation as a material distribution topology optimization problem - Eddie Wadbro	link
18:00 - 18:20		Design optimization using the cut finite element method - Daniel Elfverson	link
18:25 - 18:45	6	General meeting - Trond Kvamsdal	

19:30 - 22:00	Reception buffet at Guitars the Museum / Hundra Gastropub Address: Vasagatan 18-20, Umeå - Dinner buffet including two beverages (beer/wine)		
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Friday 26 October 2018 - Morning

TIME	Room	EVENT	PDF
09:00 - 09:45	6	Plenary lecture: Computational fluid dynamics and air distribution in rooms Peter V. Nielsen, Aalborg University Denmark (Chair: Peter Hansbo)	link
09:45 - 10:10	<i>Coffee break</i>		
10:10 - 11:50	3	Model reduction and multiscale methods (Chair: Peter Hansbo)	
10:10 - 10:30		Modeling microstructural beams, plates and shells by generalized continuum theories - Jarkko Niiranen	link
10:30 - 10:50		Motion of dislocations in aluminium containing tetra' phase: MD simulations - Vasilii S. Krasnikov	link
10:50 - 11:10		A cut finite element method for elliptic bulk problems with embedded surfaces - David Samvin	link
11:10 - 11:30		Goal-oriented error control for numerical model reduction of hyperelasticity with application to computational homogenization - Fredrik Larsson	link
11:30 - 11:50		Reduced order modelling for incompressible flow problems using OpenFOAM - Salman Siddiqui	link
10:10 - 11:50	6	Solid mechanics, thin structures, and problems on surfaces (Chair: Trond Kvamsdal)	
10:10 - 10:30		On adaptive isogeometric analysis of thin plate problems - Knut Okstad	link
10:30 - 10:50		Implementation of shell element to JuliaFEM project - Antti Niemi	link
10:50 - 11:10		An alternative formulation for buckling load estimation, applied in optimization - Niels L. Pedersen	link
11:10 - 11:30		Unified modeling and discretization of flow in fractured porous media - Eiri Keilegavlen	link
11:30 - 11:50		Stability investigations for thin membranes - Anders Eriksson	link
12:00 - 12:45	6	Plenary lecture: In silico medicine and some challenges for computational mechanics Johan Hoffman, KTH Sweden (Chair: Trond Kvamsdal)	link
12:45 - 13:00	6	Closing words - Organizers	
13:00 - 14:00	<i>Lunch</i>		