

Euromech 600 technical program

Tuesday 12.03.2019	
13:00 – 14:00	Small lunch and welcome
14:00 – 16:00 Chair: <i>S. Reese</i>	<i>Joris Remmers</i> Multi-dimensional wavelet reduction of periodic micro-structural models
	<i>Frank Naets, Wim Desmet</i> An a-priori reduced order modeling approach for nonlinear finite element models in structural dynamics
	<i>Sridhar Chellappa, Lihong Feng, Peter Benner</i> Adaptive parameter sampling using surrogate error model
	<i>Thanos Antoulas</i> The Loewner framework: a new approach to data-driven modeling and reduction
16:00 – 16:30	Coffee break
16:30 – 18:00 Chair: <i>T.-P. Fries</i>	<i>Andrey Nasedkin</i> About some features of finite element modelling of piezoelectric composites at micro-level
	<i>A. K. Jha, C. S. Upadhyay</i> Solving exotic engineering problems – brute force versus elegant modelling and analysis
	<i>Stefanie Reese, Hamid Reza Bayat, Oliver Barfusz and Stephan Wulfinghoff</i> Similarities between the discontinuous Galerkin approach and reduced integration methods
18:15 – 20:00	Reception

Wednesday 13.03.2019

09:00 – 10:30	<p><i>Sven Klinkel, Rainer Reichel</i></p> <p>A polygonal element formulation based on the scaled boundary method for the analysis of nonlinear problems in solid mechanics</p>
Chair: <i>J. Remmers</i>	<p><i>Hoang-Giang Bui, Günther Meschke, Dominik Schillinger</i></p> <p>Efficient cut-cell quadrature based on moment fitting for materially nonlinear analysis</p>
	<p><i>Fadi Aldakheel, Blaž Hudobivnik, Peter Wriggers</i></p> <p>Virtual element formulation for phase-field modeling of brittle and ductile fracture</p>
10:30 – 11:00	Coffee break
11:00 – 12:30	<p><i>Christian Wieners, Kerstin Weinberg</i></p> <p>A discontinuous Galerkin method for the elastic wave equation and the application to the phase-field approximation of interfaces</p>
Chair: <i>A. Huerta</i>	<p><i>Olivier Bruls</i></p> <p>Geometric nonlinearities and the local frame approach in structural mechanics</p>
	<p><i>Thomas-Peter Fries, Daniel Schöllhammer</i></p> <p>Classical shell analysis based on tangential differential calculus</p>
12:30 – 14:00	Lunch
14:00 – 15:30	<p><i>Matteo Giacomini, Ruben Sevilla, Antonio Huerta</i></p> <p>From low to high-order hybridizable discontinuous Galerkin approximations in computational mechanics</p>
Chair: <i>D. Reddy</i>	<p><i>Julien Leclerc, Van Dung Nguyen, Ludovic Noels</i></p> <p>Damage to crack transition for ductile materials using a cohesive-band / discontinuous Galerkin framework</p>
	<p><i>Franz Chouly</i></p> <p>Nitsche's method for contact and friction</p>
15:30 – 16:00	Coffee break
16:00 – 18:00	<p><i>Pedro Díez, Alberto García-González, Sergio Zlotnik and Antonio Huerta</i></p> <p>Algebraic tools for parametric problems: supplementing finite elements with the parametric dimension</p>
Chair: <i>P. Hansbo</i>	<p><i>Johannes Riesselmann, Jonas Ketteler, Mira Schedensack, Daniel Balzani</i></p> <p>A C0-continuous finite element formulation for finite gradient elasticity</p>
	<p><i>Kerstin Weinberg, Carola Bilgen, Christian Wieners</i></p> <p>Phase-field simulations of cracks growth in different materials</p>
	<p><i>Thomas Wihler</i></p> <p>Energy based adaptivity in variable-order FEM</p>
18:00 – 19:00	Discussion – free time
19:00 –	Conference dinner (Rathauskeller)

Thursday 14.03.2019

Thursday 14.03.2019	
09:00 – 10:30 Chair: <i>D. Balzani</i>	<i>Ramon Codina, Ino Castañar, Joan Baiges</i> Approximation of incompressible elastic materials at large strains using stabilized finite element methods
	<i>Peter Hansbo</i> Augmented Lagrangian methods for nonlinear problems
	<i>Beverley Grieshaber, Faraniaina Rasolofoson, Daya Reddy</i> Convergent approximations for near-incompressible and near-inextensible transversely isotropic elasticity
10:30 – 11:00	Coffee break
11:00 – 12:30 Chair: <i>L. Noels</i>	<i>Gianluigi Rozza</i> Reduced order methods for PDEs: state of the art and perspectives with applications in computational mechanics
	<i>Mauricio Fernández, Felix Fritzen</i> On hybrid approaches combining reduced order modeling and artificial neural networks for multiscale mechanical simulations
	<i>Hamid Reza Bayat, Hans-Philipp Schreyer, Shahed Rezaei, Stefanie Reese</i> Interface failure modeling applying cohesive discontinuous Galerkin method
12:30 – 14:00	Small lunch
14:00 – 17:00	Excursion