GAMM2025

Tuesday 8 April 2025

S08: Multiscales and homogenization: S08.01 - Room 12 (08:30 - 10:30)

-Conveners: Michał Wichrowski; Jan Hauck

time	[id] title	presenter
08:30	[209] Micromechanical modelling of void growth in metals and alloys deforming by slip and twinning	VIRUPAKSHI, Saketh KOWALCZYK-GAJEWSKA, Katarzyna
09:10	[210] On the efficient solution of cell problems by means of wavelet-enhanced FFT-approaches	KAISER, Tobias
09:30	[211] Analysis of an X-FFT solver for two-dimensional thermal homogenization problems	GEHRIG, Flavia
09:50	[212] Modeling of porous materials on multiple length scales using FE and FFT approaches	DAHLER, Julian
10:10	[213] Thermo-mechanically coupled FE-FFT-based simulation of polycrystalline materials	GIERDEN, Christian

S08: Multiscales and homogenization: S08.02 - Room 12 (16:30 - 18:30)

-Conveners: Vincent von Oertzen; Mohammad Sarhil

time	[id] title	presenter
16:30	[214] Generalized Criteria for Hyperintegration in Reduced-Order Multiscale Simulations	HÜTTER, Geralf
17:10	[215] Statistically compatible hyper-reduction for variationally consistent homogenization and its application to diffusion	HAUCK, Jan
17:30	[216] Nonlinear reduced order modeling for computational homogenization using manifold learning and hyperreduction techniques	FAUST, Erik
17:50	[217] An efficient multiscale finite element approach for ferroelectric continua	WAKILI, Reschad
18:10	[218] Hyper-reduction through empirically corrected clustering	WULFINGHOFF, Stephan

Wednesday 9 April 2025

S08: Multiscales and homogenization: S08.03 - Room 12 (16:30 - 18:30)

-Conveners: Tobias Kaiser; Yousef Heider

time	[id] title	presenter
16:30	[219] Neural network enhanced computational polyconvexification	BALAZI, Loïc
16:50	[220] Deep Eshelby Network: An AI Framework for Multiscale Mean-Field Homogenization	SCHWAIGHOFER, Michael
17:10	[221] Digital physics of 3D-printed sand cores	DONVAL, Elodie
17:30	[222] Model discovery in multiscale simulations for anisotropic materials	URREA-QUINTERO, Jorge-Humberto
17:50	[223] Deep-Learning-Based Numerical Homogenization of Heterogeneous Media	KRÖPFL, Fabian
18:10	[224] Digital process and functional design for PUR foam components based on multiscale simulations	STAUB, Sarah

Thursday 10 April 2025

S08: Multiscales and homogenization: S08.04 - Room 12 (08:30 - 10:30)

-Conveners: Christian Gierden; Johannes Neumann

time	[id] title	presenter
08:30	[225] Microstructure-Property Relationships in Solid Oxide Fuel Cell Electrodes	LANGNER, Eric
08:50	[226] A Homogenization Approach for Modeling Ion Transport in Solid Oxide Fuel Cells	PUDERBACH, Janna
09:10	[227] FExMS - Coupling Finite Elements with Molecular Statics by Homogenization	NEELAKANDAN, Aagashram
09:30	[228] Multiscale modeling of lamellar materials accounting for size effects	KLEIN, Claudius
09:50	[229] The influence of microstructure model parameters on the prediction of effective elastic properties of cement paste	BURCZYŃSKI, Tadeusz
10:10	[230] FE² method to model rod- and beam-like carbon-based nanostructures	OCHS, Julian

S08: Multiscales and homogenization: S08.05 - Room 12 (14:00 - 16:00)

-Conveners: Geralf Hütter; Katarzyna Kowalczyk-Gajewska

time	[id] title	presenter
14:00	[231] Towards a digital twin for pavements: A viscoplastic enhancement of the Microlayer framework for asphalt modeling	MAY, Marcel
14:20	[232] Inverse design of architected materials: spinodoids vs TPMS	OTTO, Alexandra
14:40	[233] Variable Scale Separations in Homogenization of Phase Transforming Materials	VON OERTZEN, Vincent
15:00	[234] Development and Implementation of a New Algorithm for Periodic Boundary Conditions in 3D RVE Models	SADEGHPOUR, Reza
15:20	[235] Experiments on the energy absorption of open cellular structures under static and dynamic loading	WEINBERG, Kerstin
15:40	[236] Generating microstructures for long fiber reinforced composites with fiber curvature control	LAUFF, Celine

S08: Multiscales and homogenization: S08.06 - Room 12 (16:30 - 18:30)

-Conveners: Tobias Kaiser; Christian Gierden

time	[id] title	presenter
16:30	[237] Continuum Modeling of Dislocation Microstructures under Contact Mechanics	LEE, Sing-Huei
16:50	[238] Empirically Corrected Cluster Cubature for Reduced Order Models	GOLDBECK, Hauke
17:10	[239] A generic software framework for adaptively solving two-scale coupled problems	DESAI, Ishaan
17:30	[240] Upscaling Paper Microstructures: A Statistical Approach Utilizing Mechanical and Image Data	NEUMANN, Johannes
17:50	[242] Identification of material parameters in the relaxed micromorphic model	SARHIL, Mohammad