

GAMM2025

Tuesday 8 April 2025

S22: Scientific computing: S22.01 - Room 0.29 (08:30 - 10:30)

-Conveners: Silke Glas

time	[id] title	presenter
08:30	[442] Rational Surrogate Modeling of Parametric Dynamical Systems	RÖMER, Ulrich
09:10	[443] A parallel batch greedy algorithm in reduced basis methods	REICH, Niklas
09:30	[444] Towards an efficient shifted Cholesky-QR for applications in model order reduction	BINDHAK, Maximilian
09:50	[445] Stability and Error Analysis of Reduced-Order Methods Based on POD with Finite Element Solutions for Nonlocal Diffusion Problems	NIE, Yufeng
10:10	[446] Discontinuous Galerkin and Trefftz methods for Model Reduction	BORN, Tobias

S22: Scientific computing: S22.02 - Room 0.29 (16:30 - 18:30)

-Conveners: Silke Glas

time	[id] title	presenter
16:30	[447] The Fast Newton Transform: Interpolation in downward closed spaces reaching the optimal geometric approximation rates for Bos-Levenberg-Trefethen functions	HECHT, Michael
16:50	[448] On a multigrid solution technique for the three-dimensional incompressible Navier-Stokes equations using discretely divergence-free finite elements	LOHMANN, Christoph
17:10	[450] Preconditioning for a coupled Navier-Stokes Cahn-Hilliard model for the morphology evolution in organic solar cells	ÇILOĞLU, Pelin
17:30	[451] Multilevel Overlapping Schwarz Preconditioners for Fluid Problems	KÖHLER, Stephan
17:50	[453] Temporal Multiscale Modelling of Long-term Damage in Fluid-structure Interaction Problems	CHANG DOMINGUEZ, Dayron

Wednesday 9 April 2025

S22: Scientific computing: S22.03 - Room 0.29 (08:30 - 10:10)

-Conveners: Andreas Sommer; Melina Merkel

time	[id] title	presenter
08:30	[454] Neural Operator-accelerated Parallel-in-Time Methods	GÖTSCHER, Sebastian
08:50	[455] A Physics-Informed Neural Network with Generalized Finite Difference method framework for solving groundwater flow	LI, Tsung-Han
09:10	[456] Autoencoders with CUR Decompositions for Physics-preserving Low-order Models in Fluid Flow	KIM, Yongho
09:30	[457] Concepts and strategies for the mathematical modelling of electroplating	SCHWÖBEL, Stephan Daniel
09:50	[458] Development of a GPU-accelerated, Finite Element based Dynamical Core for Sea Ice	RICHTER, Thomas

S22: Scientific computing: S22.04 - Room 0.29 (16:30 - 18:30)

-Conveners: Silke Glas

time	[id] title	presenter
16:30	[459] A Surface Crouzeix-Raviart Element for Geophysical Flow Problems	MEHLMANN, Carolin
17:10	[460] Efficient numerical methods for the Maxey-Riley-Gatignol equation	RUPRECHT, Daniel
17:30	[462] Magneto-mechanical coupling for magnetostriction using isogeometric analysis	MERKEL, Melina
17:50	[463] Isogeometric Analysis of 2D Magnetostatics with THB-Splines enriched by Bézier Extraction for Local Refinement	GRENDAS, Andreas

Thursday 10 April 2025

S22: Scientific computing: S22.05 - Room 0.29 (08:30 - 10:30)

-Conveners: Melina Merkel

time	[id] title	presenter
08:30	[464] Algorithmic Differentiation for Second-Order Derivatives of Fixed-Point Iterations with ADOL-C	SIEBERT, Tim
08:50	[465] MaRDI Open Interfaces for Scientific Computing	KABANOV, Dmitry I.
09:10	[466] Efficient Implementation of a semi-smooth Newton method for parabolic PDE-constraint optimization	REINHOLD, Alexander
09:30	[468] Automatic code generation for efficient matrix-free non-linear solvers with application to solid mechanics	WICHROWSKI, Michał
09:50	[469] IFDIFF - A Matlab Toolkit for ODEs with Filippov-type and State-Dependent Switches	SOMMER, Andreas
10:10	[470] Spectral gaps for Laplacians of symplectic groups	MIZERKA, Piotr

S22: Scientific computing: S22.06 - Room 0.29 (14:00 - 16:00)

-Conveners: Melina Merkel

time	[id] title	presenter
14:00	[471] Higher-Order Projection Methods for Variable Viscosity Fluids	SCHUSSNIG, Richard
14:20	[472] Transient numerical investigation of fluid flow with the Fast Boundary-Domain Integral Method	TIBAUT, Jan
14:40	[473] Smoothed aggregation algebraic multigrid for problems with heterogeneous and anisotropic material behavior	FIRMBACH, Max
15:00	[474] A Hybrid Ice Model	KAHL, Saskia
15:20	[475] Matrix-free inexact preconditioning techniques for discretizations on structured grids	MIKA, Michał
15:40	[790] NURBS fitting method for smoothed surface approximation in polymer additive manufacturing	TIMMANN, Frederic

S22: Scientific computing: S22.07 - Room 0.29 (16:30 - 18:30)

-Conveners: Sebastian Götschel; Melina Merkel

time	[id] title	presenter
16:30	[477] Meshless Numerical Approach to Forced Convection Problems with Optimized Port Configuration	CHU, Chiung-Lin FAN, Chia-Ming
16:50	[478] Method of Fundamental Solutions with Domain-Decomposition Method and the Particle Swarm Optimization for Solving the Degenerate Boundary Problems	LAM, Tan Phat
17:10	[479] Numerical solutions of boundary detection problems by using the method of fundamental solution and the particle swarm optimization	FAN, Chia-Ming
17:30	[480] Optimization of the exhaust unit geometry to minimize Ex-zone dimensions	KAUFHOLD, Nils