

Follow-Up-Workshop to TP  
**“Multiscale Problems: Algorithms, Numerical Analysis and  
 Computation”**

August 19 - 23, 2024

organized by

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*Time measurement: CEST*

• **Monday, August 19**

08:30 - 09:00	<i>Arrival and Self-Registration</i>
09:00 - 09:10	<i>Welcome</i>
09:10 - 10:00	<b>Eric Chung</b> <i>Multiscale methods for a class of high-contrast heterogeneous sign-changing problems</i>
10:00 - 10:30	<i>Coffee break</i>
10:30 - 11:20	<b>Barbara Verfürth</b> <i>Numerical multiscale methods for nonlinear and randomly perturbed problems</i>
11:30 - 12:20	<b>Carsten Carstensen</b> <i>tba</i>

*Lunch break*

15:00 - 15:50	<b>Houman Owhadi</b> <i>Bridging Scales with Gaussian Processes: Applications to Fluid Dynamics and Nonlinear PDEs</i>
16:00 - 16:30	<i>Coffee break</i>
16:30 - 17:20	<b>Michael Feischl</b> <i>Stochastic collocation for dynamic micromagnetism</i>
from 17:30 on	<i>Get-Together</i>

• **Tuesday, August 20**

09:00 - 09:50	<b>Li-yeng Sung</b> <i>DD-LOD</i>
10:00 - 10:30	<i>Group Photo and Coffee break</i>
10:30 - 11:20	<b>Anna Persson</b> <i>Numerical investigation of vortex formation in Bose-Einstein condensates</i>
11:30 - 12:20	<b>Yalchin Efendiev</b> <i>Multicontinuum homogenization and multiscale finite element methods</i>

*Lunch break*

15:00 - 15:50	<b>Frédéric Legoll</b> <i>Multiscale Finite Element Methods for advection-diffusion and for reaction-diffusion problems</i>
16:00 - 16:30	<i>Coffee break</i>
16:30 - 17:20	<b>Dietmar Gallistl</b> <i>Computational multiscale methods for nondivergence-form elliptic partial differential equations</i>

• **Wednesday, August 21**

09:00 - 09:50	<b>Robert Scheichl</b> <i>Multiscale-Spectral Generalized Finite Elements: Efficient Localized Model Order Reduction</i>
10:00 - 10:30	<i>Coffee break</i>
10:30 - 11:20	<b>Guanglian Li</b> <i>Wavelet-based Edge Multiscale Finite Element Methods for Singularly Perturbed Convection-Diffusion Equations</i>
11:30 - 12:20	<b>Robert Lipton</b> <i>Dynamic brittle fracture as a well posed nonlocal initial value problem</i>

*Lunch break*

15:00 - 15:50	<b>Lei Zhang</b> <i>Quantum algorithms for multiscale PDEs</i>
16:00 - 16:30	<i>Coffee break</i>
16:30 - 17:20	<b>Matthias Deiml</b> <i>Quantum realization of the finite element method</i>

• **Thursday, August 22**

09:00 - 09:50	<b>Mario Ohlberger</b> <i>Localized model order reduction for parameter optimization with multi-scale PDE constraints</i>
10:00 - 10:30	<i>Coffee break</i>
10:30 - 11:20	<b>Axel Målqvist</b> <i>Numerical simulation of Timoshenko-beam models of fibre based materials</i>
11:30 - 12:20	<b>Manolis Georgoulis</b> <i>tba</i>

*Lunch break*

15:00 - 15:50	<b>Qiang Du</b> <i>Asymptotically compatible discretization of parameterized nonlocal models</i>
16:00 - 16:30	<i>Coffee break</i>
16:30 - 17:20	<b>Gabriel Barrenea</b> <i>The Multiscale Hybris (Mixed) Finite Element Method</i>

• **Friday, August 23**

09:00 - 09:50	<b>Patrick Henning</b> <i>Multiscale approximations for the stationary Ginzburg-Landau equation</i>
10:00 - 10:30	<i>Coffee break</i>
10:00 - 11:20	<b>Roland Maier</b> <i>Achieving higher-order convergence rates in numerical homogenization</i>
11:30 - 12:20	<b>Discussion Session</b> <i>Open problems</i>

*Lunch break and final discussions*

16:00 - 16:30	<i>Coffee break</i>
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