HAUSDORFF RESEARCH INSTITUTE
FOR MATHEMATICS

UNIVERSITÄT BONN

Workshop

"Taming the PDEs: Tailored Methods, Multiscale Approaches, and Real-World Application"

March 9 - 13, 2026

organized by
Christian Döding, Andreas Rupp

Time measurement: CET

- **Monday, March 9**

08:30 - 09:00	*Arrival and Self-Registration*
09:00 - 10:00	**Thomas Wick** *A posteriori error control and adaptive discretizations for nonstationary, nonlinear, coupled PDE systems and coupled variational inequality systems*
10:00 - 11:00	*Coffee break*
11:00 - 12:00	**Vishnu Raveendran** *Wave propagation through a time-varying heterogeneous interface*
12:00 - 14:30	*Lunch break*
14:30 - 15:30	**Free discussion time**
15:30 - 16:15	*Coffee break*
16:15 - 17:15	**Andreas Rupp** *PDEs in hypergraphs and networks (of surfaces)*
from 17:15 on	*Get-Together*

- **Tuesday, March 10**

09:00 - 10:00	**Moritz Hauck** *Guaranteed lower energy bounds for the Gross-Pitaevskii problem*
10:00 - 10:45	*Coffee break*
10:45 - 11:45	**Johan Wärnegård** *Mathematical modeling of quantum fluids of light*
11:45 - 14:30	*Group Photo and Lunch break*
14:30 - 15:30	**Benjamin Stamm** *Computational methods in Density Functional Theory (DFT)*
15:30 - 16:15	*Coffee break*

- **Wednesday, March 11**

09:00 - 10:00	**Mahima Yadav** *Riemannian optimization methods for computing minimizers of the con strained Gross-Pitaevskii energy in the multicomponent setting*
10:00 - 10:45	*Coffee break*
10:45 - 11:45	**Patrick Henning** *The pollution effect for the Ginzburg-Landau equation*
11:45 - 14:30	*Lunch break*
18:00 - 21:00	**Workshop Dinner at Sudhaus**

- **Thursday, March 12**

09:00 - 10:00	**Benjamin Dörich** *Approximation of minimizers of the Ginzburg–Landau energy in non-convex domains*
10:00 - 10:45	*Coffee break*
10:45 - 11:45	**Michael Crocoll** *Scientific Machine Learning for the Ginzburg-Landau equation*
11:45 - 14:30	*Lunch break*
14:30 - 15:30	**Gabriel Barrenechea** *Bound-preserving discretisations for general meshes*
15:30 - 16:15	*Coffee break*
16:15 - 17:15	**Larissa Martins** $H(\mathrm{div};\Omega)$*-Conforming Multiscale Hybrid-Mixed Methods for Elasticity with Weak and Strong Symmetry*

- **Friday, March 13**

09:00 - 10:00	**Lucas Bouck** *Commutativity and non-commutativity of limits in the nonlinear bending theory for prestrained microheterogeneous plates*
10:00 - 10:45	*Coffee break*
10:45 - 11:45	**Andres Galindo-Olarte** *A Nodal Discontinuous Galerkin Method with Low-Rank Phase Space Representation for the Multi-Scale BGK Model*
11:45 - 12:00	*Closing remarks*