

Workshop on  
“New perspective on Shape and Topology Optimization”

December 11 - 15, 2023

organized by

Elisa Davoli (TU Vienna), Idriss Mazari-Fouquer (CEREMADE, Paris),  
Kevin Sturm (TU Vienna)

• **Monday, December 11th, 2023**

09:45 – 10:15 **Registration & Welcome**

10:15 – 11:00 **Cristina Trombetti (U Napoli)**

*On the Rearrangement of a function and its applications*

11:00 – 11:30 **Coffee break**

11:30 – 12:15 **Giuseppe Buttazzo (U Pisa)**

*Antagonistic cost functionals in shape optimization.*

12:15 – 13:00 **Elvise Berchio (Politecnico, Torino)**

*Some optimization problems in mathematical models for suspension bridges*

13:00 – 14:15 **Lunch break**

14:15 – 15:00 **Raphael Fernandes (U Leicester)**

*Level set shape optimisation on aggregated polytopic meshes*

15:00 – 15:30 **Coffee Break**

15:30 – 16:15 **Antoine Laurain (University Duisburg-Essen)**

*Sensitivity analysis and tailored design of minimization diagrams*

16:15 – 17:00 **Maria-Luisa Rapún**

*-online- TBC*

• **Tuesday, December 12th, 2023**

09:45 – 10:30 **Annika Bach (TU Eindhoven)**

*Emergence of topological singularities in the antiferromagnetic XY-model on the triangular lattice*

10:30 – 11:00 **Coffee break**

11:00 – 11:45 **Giuseppe Tomassetti (U Roma Tre)**

*TBA*

11:45 – 12:30 **Elvira Zappale (U Roma 1)**

*Optimal design problems and applications to thin structures*

12:30 – 14:00 **Lunch break**

14:00 – 14:45 **Peter Gangl (RICAM, Linz)**

*Numerical approximation of topological derivatives and some applications*

14:45 – 15:15 **Coffee break**

15:15 – 16:00 **Kathrin Welker (Technische Universität Bergakademie Freiberg)**

*Optimization of piecewise-smooth shapes*

16:00 – 16:45 **Harald Garcke (U Regensburg)**  
*Phase field approaches for shape and topology optimization*  
*-online- TBC*

- **Wednesday, December 13th, 2023**

09:45 – 10:30 **Ilaria Lucardesi (U Pisa)**  
*On Blaschke-Santaló diagrams in shape optimization*

10:30 – 11:00 **Coffee break**

11:00 – 11:45 **Flaviana Iurlano (U Genova)**  
*Approximation of SBV functions with possibly infinite jump set*  
*– online*

11:45 – 12:30 **Charles Dapogny (U Grenoble Alpes)**  
*Optimization of the shape of regions supporting the boundary conditions of a physical problem*

12:30 – 13:45 **Lunch break**

14:00 – 14:45 **Davide Buoso (UEP, Amedeo Avogadro)**  
*Inequalities and asymptotics for polyharmonic eigenvalues*

14:45 – 15:15 **Coffee Break**

15:15 – 16:00 **Samuel Amstutz (Avignon U)**  
*Anisotropic perimeter approximation for topology optimization*

16:00 – 16:45 **Antonio André Novotny (National Laboratory for Scientific Computing)**  
*A Non-Iterative Reconstruction Method for Solving a Class of Geometrical Inverse Problems*

18:00 – 22:00 **Conference Dinner**

- **Thursday, December 14th, 2023**

09:45 – 10:30 **Caterina Zeppieri (WWU Münster)**  
*Homogenisation of nonlinear Dirichlet problems in randomly perforated domains*

10:30 – 11:00 **Coffee break**

11:00 – 11:45 **Stefano Almi (U Napoli)**  
*Phase-field Topology Optimization and applications to plasticity and microstructures*

11:45 – 12:30 **Elise Bonhomme (U Paris Sud, Orsay)**  
*Can quasi-static evolutions of perfect plasticity be derived from brittle damage evolutions?*

12:30 – 13:45 **Lunch break**

13:45 – 14:30 **Marc Dambrine (University of Pau)**  
*Towards robustness in shape optimization*

14:30 – 15:00 **Coffee break**

- **Friday, December 15th, 2023**

09:30 – 10:15 **Rémi Robin (MINES ParisTech)**  
*Some optimisation problems for magnetic confinement in stellarator*

10:15 – 10:45 **Coffee break**

10:45 – 11:30 **Nicolas Van Goethem (Universidade de Lisboa)**  
*Some fracture evolution problems by topological sensitivity analysis*

11:30 – 11:45 **Concluding remarks**

**All talks take place at ESI Boltzmann Lecture Hall!**