

SCHEDULE | FRIDAY, SEPTEMBER 30, 2022

09:00 – 09:15	Opening remarks	
09:15 – 10:00	Philipp Petersen	Deep neural networks for applied mathematics: PDEs, inverse problems, and numerical stability
10:00 – 10:30	Alfio Borzi	On multilevel, preconditioning, and optimal control techniques in machine learning
10:30 – 11:00	Coffee break	
11:00 – 11:30	Behzad Azmi	Receding horizon control for time-varying parabolic PDEs
11:30 – 12:00	Marius Tucsnak	Linear and nonlinear perturbations of control systems described by the Euler–Bernoulli plate equation
12:00 – 12:30	Enrique Zuazua	Dissipation and hypocoercivity for hyperbolic systems
12:30 – 14:00	Lunch break	
14:00 – 14:45	Philipp Grohs	Limitations and opportunities for deep learning based PDE solvers
14:45 – 15:15	Laurent Pfeiffer	Large-scale non-convex optimization: randomization and numerical resolution
15:15 – 15:45	Tuomo Valkonen	Speeding up first-order methods for optimisation with non-convex constraints
15:45 – 16:15	Coffee break	
16:15 – 16:45	Samuel Amstutz	Variational approximation of interface energies for topology optimization and optimal partitioning
16:45 – 17:15	Michael Hinze	PDE constrained shape optimization in the Lipschitz topology
17:15 – 17:45	Kevin Sturm	A control approach to topological derivatives
17:45 – 18:15	Stefan Volkwein	A Journey from Berlin via Graz to Konstanz: second-order methods and model reduction
19:00 – 22:00	Conference dinner	

SCHEDULE | SATURDAY, OCTOBER 1, 2022

09:00 – 09:45	Arnulf Jentzen	Optimization with gradient descent methods: On the learning of random variables, the existence of minimizer, and blow up phenomena
09:45 – 10:15	Dante Kalise	Learning feedback laws for collective dynamics
10:15 – 10:45	Sébastien Court	Feedback stabilization of a surface tension system modeling the motion of a two-dimensional soap bubble
10:45 – 11:15	Coffee break	
11:15 – 11:45	Roland Herzog	On discretized shape optimization problems
11:45 – 12:15	Fredi Tröltzsch	An example of non-uniqueness of local minimizers for a parabolic optimal control problem
12:15 – 13:45	Lunch break	
13:45 – 14:15	Armin Rund	Robust RF pulse design in MRI
14:15 – 14:45	Michael Hintermüller	TBC
14:45 – 15:00	Closing	