Optimization Program Summer School
August 8-12, 2016

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"Computational Methods for PDE Constrained Optimization"

This course discusses PDE constrained optimization in an algorithmic framework. It starts out with a review on gradient based optimization methods. Next, the specific challenges in the case of PDE constraints are analyzed and solution approaches are discussed. Aspects of practical realizations in specific applications will be addressed, as well. Among the problem classes treated are optimal control problems, inverse problems and shape optimization problems. Multigrid optimization methods will be a central algorithmic topic. Hands-on exercises are planned for the afternoon.