

Institute for Analysis and Scientific Computing, and Doctoral Program "Dissipation and Dispersion in Nonlinear PDEs"

Course Announcement:

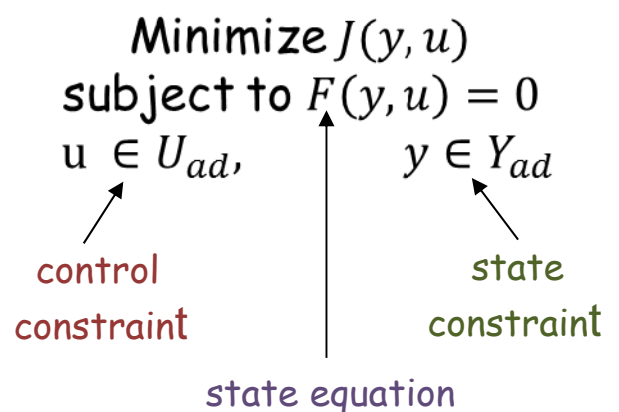
Optimal Control of Partial Differential Equations

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Contents:

- Motivating examples
Optimal heating problems
- Finite-dimensional optimal control problems
- Optimal control of elliptic PDEs
Linear-quadratic problems: existence, necessary optimality conditions, adjoint state, numerical methods
- Optimal control of semilinear elliptic PDEs
Control-to-state operator, optimality conditions, formal Lagrangian principle



- $J : Y \times U \rightarrow R$ cost functional
- U, V, Y functional spaces
- $F : Y \times U \rightarrow V$
- $U_{ad} \subset U, Y_{ad} \subset Y$