

OPTIMAL CONTROL OF NON-SMOOTH PARTIAL DIFFERENTIAL EQUATIONS

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ABSTRACT

This talk is concerned with PDE-constrained optimization problems where the PDE constraint involves Lipschitz continuous but not classically differentiable terms. Correspondingly, the control-to-state mapping is not differentiable either, and classical approaches fail. In particular, there exists a zoo of optimality conditions of different strengths, roughly corresponding to different generalized derivatives of the control-to-state mapping. We derive such optimality conditions for model problems and discuss how they can be used for their numerical solution.

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