



Einladung zum Oberseminar Dynamische Systeme und Kontrolltheorie

Julius-Maximilians-Universität Würzburg
Professur für Dynamische Systeme und Kontrolltheorie

Prof. Dr. Daniel Wachsmuth

Universität Würzburg, Professur für Optimale Steuerung

Existence of Solutions to Control Problems of Semilinear Partial Differential Equations

joint work with Eduardo Casas (Santander)

We study optimal control problems of semilinear elliptic and parabolic equations. A tracking cost functional, quadratic in the control and state variables, is considered. No control constraints are imposed. We prove that the corresponding state equations are well-posed for controls in L^2 . However, it is well-known that in the L^2 framework the mappings involved in the control problem are not Frechet differentiable in general, which makes any analysis of the optimality conditions challenging. Nevertheless, we prove that every L^2 optimal control belongs to L^∞ , and consequently standard optimality conditions are available.

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Zu diesem Vortrag laden wir Sie herzlich ein.

gez. Sergey Dashkovskiy