Error Estimates for Bang-Bang Optimal Control of PDE's

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Abstract

In the optimal control of PDE's, there are problems without a control in their cost functional. Under certain assumptions, these problems admit an optimal control with a so called bang-bang structure. The optimality conditions for the bang-bang optimal control problems subject to a semilinear elliptic PDE and box constraint for the control is known.

In this talk, we present the error estimates for our semilinear bang-bang optimal control problem. To derive the error estimate for the involved variable, we used the variational discretization approach for the numerical approximation of the control problem.

This talk is a joint work with Prof. Casas (Universidad de Cantabria, Spain) and Prof. Hinze (Universität Hamburg, Germany).