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Optimal feedback control for undamped wave equations by solving a HJB equation

An optimal finite-time horizon feedback control problem for (semi-linear) wave equations is presented. The feedback law can be derived from the dynamic programming principle and requires to solve the evolutionary Hamilton-Jacobi-Bellman (HJB) equation. Classical discretization methods based on finite elements lead to approximated problems governed by ODEs in high dimensional spaces which makes the numerical resolution by the HJB approach infeasible. An approximation based on spectral elements is used to discretize the wave equation. The effect of noise is considered and numerical simulations are presented to show the relevance of the approach. This is joint work with Karl Kunisch (University of Graz) and Hasnaa Zidani (ENSTA ParisTech & INRIA Saclay).

Ort: Raum 30.02.003 (2. Stock) (Mathegeb. 30 West) Zeit: Dienstag, 17.06.2013, um 12.00 Uhr

Zu diesem Vortrag laden wir Sie herzlich ein.

gez. Prof. Dr. Alfio Borzi