Seminar über Fragen der Mechanik

zu folgendem Vortrag wird herzlich eingeladen

Donnerstag, 06.09.2012, 11:00 Uhr, Konrad-Zuse-Str. 3-5, Raum 2.030

Variational Formulation and Optimal Control of Hybrid Lagrangian Systems

Kathrin Flaßkamp

Department of Mathematics, University of Paderborn

In this talk, we introduce an optimal control problem for hybrid Lagrangian control systems. The dynamics of these systems and their discrete approximations are derived via a hybrid variational principle which is based on the Lagrange-d'Alembert principle for continuous Lagrangian control systems. Optimal control problems are stated in a continuous and in a numerically treatable, i.e. discrete version. For the implementation, we present a two layer approach which decouples the continuous parts of a hybrid trajectory. Additionally, this enables us to solve the optimal control problem also for multiple objectives. The approach is exemplified for a simple mechanical system.

LTM

LTD

Friedrich-Alexander-Universität
Erlangen-Nürnberg

Axiomata sive Leges Motûs