

Dienstag, 29.11.2011

Hörsaal D, Chemie Zentralbau, 17:15 Uhr

Sprecher: Alfio Borzi
Universität Würzburg

**Thema: Computational methodologies for
solving quantum optimal control
problems**

Abstract: The control of quantum states in physical systems has a host of challenging and foreseen applications in nano-sciences that requires the accurate and fast solution of quantum control problems governed by Schroedinger-type models. This task involves the development of solution methodologies that accommodate the nonlinear structure of the control mechanisms and the complex functional spaces where the control problems are formulated. Recent advances in computational techniques are discussed that improve accuracy and efficiency through multilevel strategies, suitable discretization schemes, and appropriate choice of the functional spaces where the controls are sought. In this framework, necessary optimality conditions are investigated for representative quantum systems arising in quantum optics, dipole transition, and in the transport of Bose-Einstein condensates. A discussion on the ongoing investigation of the influence of model and data uncertainty in the realization of controls concludes this talk.

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Weitere Informationen unter
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