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Leges Motus*



Seminar über Fragen der Mechanik

zu folgendem Vortrag wird herzlich eingeladen

Mittwoch, **09.10.2013, 16:00 Uhr**, Egerlandstr. 5, Raum 0.044

DOpElib - A Differential Equations and Optimization Toolkit

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DOpElib is mainly based on the deal.II finite element library (C++). Originally, the DOpE project was initiated in the year 2009 at the University of Heidelberg in the numerical analysis group of Prof. Rannacher. The aim of DOpElib is to provide a free software toolkit to solve forward PDE problems as well as optimal control problems constrained by PDEs. The focus is on the numerical solution of both stationary and nonstationary problems which come from different application fields, like elasticity and plasticity, fluid dynamics and fluid-structure interactions. Its main feature is to give a unified interface to high level algorithms such as time stepping methods, nonlinear solvers and optimization routines. The modularized access to the algorithms allows to switch between different algorithms for the same problem with little effort. As one of the developers, I will give an introduction to this toolbox. Furthermore, some examples will be presented to demonstrate the capabilities of the library and to show how various kinds of optimization problems can be solved with DOpElib.

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