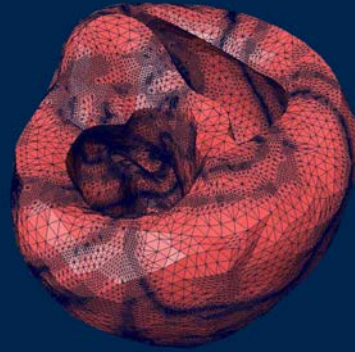


JUNI  
**13**  
17:00



# Mathematik Kolloquium Innsbruck

**Jens Lang**

Technische Universität Darmstadt

## **Adaptivity in Numerical Methods for ODEs and PDEs: Towards the Simulation of a Full Heartbeat**

In this talk I will emphasize on the use of adaptive strategies in numerical algorithms to solve systems of ordinary and partial differential equations more efficiently and reliably. After a brief introduction to local and global error control for time integrators general approaches to combine adaptivity in space and time are discussed. Finally, I will speak about recent developments in using adaptive multilevel strategies for PDE-constrained optimization and uncertainty quantification. Throughout my talk I will present numerical results for academic as well as real-life applications including chemical reaction-diffusion systems, regional hyperthermia, electro-cardiology, magneto-quasistatics, glass cooling and complex turbulent flows.

Mittwoch 13. Juni 2018, 17:00 Uhr, HSB 6

Tee und Kaffee ab 16:30 Uhr im Institut für Mathematik

Gäste und Studierende sind herzlich willkommen!

Institut für Mathematik, Universität Innsbruck, Technikerstraße 13, 7. Stock