HGS MathComp

IWR
Interdisciplinary Center
for Scientific Computing

UNIVERSITÄT
HEIDELBERG
ZUKUNFT
SEIT 1386

IWR Colloquium Winter Term 2017 / 2018

November 15, 2017 / 16:15h
Mathematikon, Conference Room / 5th Floor
Im Neuenheimer Feld 205, 69120 Heidelberg

Speaker:
Prof. Elisabeth Ullmann • Technical University of Munich

Title:
"Uncertainty Quantification: Mathematical and Computational Aspects"

Abstract:
Uncertainty quantification (UQ) is a fast growing research area which deals with the impact of parameter, data and model uncertainties in complex systems. We focus on models which are based on partial differential equations (PDEs) with random inputs. For deterministic PDEs there are many classical analytical results and numerical tools available. The treatment of PDEs with random inputs, however, requires novel ideas and tools. We illustrate the mathematical and algorithmic challenges of UQ for Bayesian inverse problems arising from geotechnical engineering and medicine, and an optimal control problem with uncertain PDE constraints.

This talk is part of the HGS MathComp Ladyzhenskaya Lecture Series.

Website Prof. Ullmann: www-m2.ma.tum.de/bin/view/Allgemeines/Ullmann
Website IWR-Colloquium: www.iwr.uni-heidelberg.de/iwr-colloquium
Website HGS MathComp: www.mathcomp.uni-heidelberg.de