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AORTIC DISSECTION
MECHANICS - MODELING - SIMULATION

TU Graz
Graz University of Technology

Institut für Theoretische Physik – Computational Physics

Einladung zum Seminarvortrag

von

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Title: "Bayesian approach for high dimensional inverse problems"

Abstract:
Inverse problems arise in many areas of science and in particular in imaging systems. Regularization methods have shown their effectiveness in proposing algorithms and solutions for these inverse problems.
A few limitations are still open: Translating prior knowledge in a prior law, determination of the regularization parameter and uncertainty quantification.
Bayesian inference approach can push these limitations farther. In particular, using hierarchical priors for the first limitation, conjugate priors for the hyperparameters and the third one, uncertainty quantification is insured by construction by using posterior laws in the Bayesian approach.
However, Computational costs in great dimensional problems is very high. Hopefully, Variational Bayesian Approximation (VBA) can come in help. These issues will be illustrated in particular in 2D and 3D Computed Tomography problems.

Zeit: Mi, 26.02.2020, 15.00 Uhr
Ort: TDK-Seminarraum (PHEG016), Petersgasse 16/EG, 8010 Graz

(Host: Wolfgang von der Linden)