ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO THE DOCTORAL SEMINAR

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"Parameter identification from optimized measurements, with applications in acoustics"

https://classroom.aau.at/Mathstat

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11:00 a.m.

Abstract

We introduce the optimal experimental design (OED) problem for inverse problems governed by partial differential equations. Experimental design is the process of specifying how measurement data are collected. Optimizing the design of experiments is important so that the uncertainty in the estimated parameters is minimized.

In particular, we propose a method for OED for source identification problems. The source that needs to be identified is sparse and infinite-dimensional, such as acoustic source, which is challenging from both mathematical and computational points of view. Our approach relies on an iteratively reweighted least-squares scheme. In addition, the OED problem also leads to optimization problems involving the eigenvalues of symmetric operators, which attracts interest in various disciplines.

Barbara Kaltenbacher and the Department of Mathematics look forward to seeing you at the talk!