ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO THE DOCTORAL SEMINAR

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"Computational methods for Sparse Solution of Parameter Identification Problems"

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Abstract

In this work, we study the inverse problem of recovering an unknown sparse source u from a noisy observation y of its image through a known linear forward operator G. First, we study the source identification problem by considering a TV-norm regularized problem. In this case, our focus is to optimize the placement of measurement points at which data are collected, such that the uncertainty in the estimated parameters is minimized. More precisely, we introduce an optimal design criterion and provide an efficient method for solving the resulting optimization problem. In addition, the mentioned parameter identification problem is also considered in a Bayesian framework. We introduce a prior distribution on the space of Radon measures. Together with some mild assumptions on the forward operator G, we then show the well-posedness of this Bayesian inverse problem.

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