

Prof. Dr. Thorsten Hohage

ABSTRACT:

Titel: Variational regularization of statistical inverse problems

We consider variational regularization methods for ill-posed inverse problems described by operator equations $F(x)=y$ in Banach spaces. One focus of this talk will be on data noise models: We will present a general framework which allows to treat many noise models and data fidelity terms in a unified setting, including Gaussian and Poisson processes, continuous and discrete models, and impulsive noise models and show rates of convergence as the noise level tends to zero. Our general results will be illustrated in the context of phase retrieval problems in coherent x-ray imaging, inverse scattering problems, and parameter identification problems in stochastic differential equations.