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Richard Nickl

**Bayesian Non-linear  
Statistical Inverse Problems**



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## Bayesian Non-linear Statistical Inverse Problems

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Bayesian methods based on Gaussian process priors are frequently used in statistical inverse problems arising with partial differential equations (PDEs). They can be implemented by Markov chain Monte Carlo (MCMC) algorithms. The underlying statistical models are naturally high- or infinite-dimensional, and this book presents a rigorous mathematical analysis of the statistical performance, and algorithmic complexity, of such methods in a natural setting of non-linear random design regression.

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