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FAKULTÄT
FÜR MATHEMATIK, INFORMATIK
UND NATURWISSENSCHAFTEN
Fachbereich Mathematik

Kolloquium über Mathematische Statistik und Stochastische Prozesse

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Efficient inference in a nonparametric estimation problem for stochastic PDEs

Stochastic partial differential equations are stochastic processes for phenomena evolving in time and space. They are becoming increasingly popular in applications and provide exciting new possibilities to model real world processes. In this talk we will focus on the nonparametric estimation of the diffusivity function in a linear stochastic partial differential equation, when spatially localised averages of the solution can be measured. A key result is the local asymptotic normality (LAN) property of the statistical model, whose proof is non-standard and based on techniques from stochastic filtering, as well as the theory of integral operators. We will discuss the key steps for the LAN property and then present an application to Bayesian statistics in the form of a Bernstein-von-Mises theorem, which allows for asymptotically valid and optimal frequentist statistical inference on the diffusivity given a suitable Gaussian prior.

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Hinweis: Das Kolloquium wird zurzeit online via BigBlueButton durchgeführt. Anmeldungen bitte über die genannte Kontaktperson.