FRIEDRICH-SCHILLER-
UNIVERSITÄT
JENA
Fakultät für Mathematik und Informatik

Institut für Mathematik

Seminar zur Stochastik

Donnerstag, 20. Juni 2019
14 Uhr c. t.
SR 384 Carl-Zeiss-Straße 3

Frau Prof. Dr. Hakima Bessaih
(University of Wyoming, derzeit FSU Jena)

"Continuous Data Assimilation with Stochastically Noisy Data"

Abstract: We analyze the performance of a data-assimilation algorithm based on a linear feedback control with observational data that contains measurements errors.
Our model consists of dynamics governed by the two-dimensional incompressible Navier-Stokes equations. The observational measurements are given by finite volume elements or nodal points of the velocity field and measurement errors are represented by a Gaussian noise. Under these assumptions, the data-assimilation algorithm consists of a system of stochastically forced Navier-Stokes equations.
The main result provides explicit conditions on the observation density resolution which guarantee explicit asymptotic bounds, as the time tends to infinity, on the error between the approximate solution and the actual solution in terms of the variance of the noise. Moreover, results on the average time error in mean are stated.

Alle Interessenten sind herzlich eingeladen

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