

FIM

Minicourses

SNF ProDoc Minicourses „Numerik“ on Numerical Solution of Inverse Problems and of Stochastic PDEs

Outline and Content:

The courses will address the mathematical formulation and the numerical analysis of stochastic partial differential equations (sPDEs). Emphasis will be on time-dependent PDEs driven by noise. In particular Q-Wiener noise will be considered. Both direct and inverse problems will be addressed. Background required for following this course: numerical analysis of elliptic and parabolic PDEs, course in probability theory, course in functional analysis, background in stochastic processes.

Modules:

October 9, 10:00 - 12:00 and October 11, 10:00 - 12:00 at HG G 43

Stig Larsson (Chalmers): Stochastic evolution PDEs: existence and regularity

October 30, 10:00 - 12:00 and November 1, 10:00 - 12:00 at HG D 16.2

Andrew Stuart (Warwick): Bayesian Inverse Problems in PDEs

November 6, 10:00 - 12:00 and November 8, 10:00 - 12:00 at HG D 16.2

Andrew Stuart (Warwick): Data Assimilation in PDEs

November 20, 10:00 - 12:00 and November 22, 10:00 - 12:00 at HG G 43

Arnulf Jentzen (ETH Zürich): Numerical analysis of nonlinear stochastic differential equations

December 4, 10:00 - 12:00 and December 6, 10:00 - 12:00 at HG G 43

Stig Larsson (Chalmers): Stochastic evolution PDEs: Finite Element Methods

The courses are sponsored by the Swiss National Science Foundation (SNF) under the SNF Pro*Doc Programme on “Efficient Numerical Solution of Partial Differential Equations” and supported by the European Research Council.