

Institute for Analysis and Scientific Computing, and Doctoral Program “Dissipation and Dispersion in Nonlinear PDEs”

Course Announcement:

Stochastic Processes and Stochastic Differential Equations

By

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Overview:

ODEs and PDEs are extensively used to model various natural processes mathematically, which are used to study the behaviour of physical entities like wave function of a particle, temperature profile of a system and velocity of a fluid. Well-known examples are Schrödinger equation, reaction-diffusion equations and Navier-Stokes equations. But, these fail to account for the randomness of these natural processes due to the external factors and hence one turns to SDEs and SPDEs. The course aims to introduce fundamentals of stochastic analysis and present the existence theory for SDEs.

Brief Syllabus:

- Probability and measure
- Lebesgue integration
- Random variables
- Discrete stochastic processes
- Brownian Motion
- Itô Lemma
- SDEs

Location and Times:

20/11/17 – 18/12/17

Monday – 16:00 - 18:00 (Sem.R. DA Grün 03 C)

Thursday – 15:00 - 17:00 (FH Hörsaal 2)
Thursday (14/12/17) – 16:00 – 18:00 (FH Hörsaal 3)

Friday – 10:00 – 12:00 (Sem.R. DA Grün 03 C)