

Fakultät für Mathematik und Informatik
Universität Passau

Einladung

von Prof. Dr. Fabian Wirth

zum Vortrag von

Prof. Dr. Andreas Neuenkirch
von der Universität Mannheim

für Dienstag, 23.1.2018, 18.00 Uhr

**in den HS 13, FIM
der Universität Passau,
Innstraße 33, 94032 Passau**

**Vortragstitel:
Recent Developments in Numerical Methods for
Stochastic Differential Equations**

Recent Developments in Numerical Methods for Stochastic Differential Equations

Stochastic differential equations (SDEs) are an important modeling tool in many areas of science. Since explicit solutions are unknown, one has to rely on numerical methods for the simulation of such SDEs.

The traditional convergence analysis for numerical methods relies on the global Lipschitz assumption for the coefficients of the SDEs. However, this is rarely met in practice.

The last ten years have seen a rapid growth in the numerical analysis of SDEs without the global Lipschitz condition. Examples include superlinear or square root coefficients, which appear e.g. in biology and mathematical finance.

After an introduction into SDEs and classical numerical results I will give a review of these developments. Moreover, I will present recent findings in the case of discontinuous coefficients. This final part is based on a joint work with M. Szölgényi (ETH Zürich) and L. Szpruch (University of Edinburgh).