

Veranstaltungen im Wintersemester 2022/23

Das siebenunddreißigste Treffen des Rhein-Main Arbeitskreises findet

Freitag, den 3. Februar 2023, ab 15:00 Uhr

an der

RPTU Kaiserslautern
Fachbereich Mathematik

im Hörsaal 48-208 statt.

Programm

- 15:00 Uhr:** [PD Dr. Philipp Öffner \(Johannes Gutenberg Universität Mainz\)](#)
Convergence of FE Based Schemes for the Euler Equations via Dissipative Weak Solutions
Den Abstract des Vortrages finden Sie [hier](#).
- 15:45 Uhr:** Tee/Kaffee
- 16:15 Uhr:** [Prof. Dr. Andreas Neuenkirch \(Universität Mannheim\)](#)
Strong Approximation of the CIR Process: a Never-ending Story
The CIR process is the prototype stochastic differential equation (SDE) for the class of square root diffusions. These equations have widespread applications, in particular in finance, biology and chemistry. Moreover, since the diffusion coefficient contains a square root and is not Lipschitz continuous, the CIR process is also the prototype example for an SDE whose coefficients do not satisfy the so-called standard assumptions for numerical analysis. Due to these reasons, the approximation of the CIR process has attracted a lot of attention in the last 20 years. In this talk, I will give a state-of-the-art summary and will present the latest developments for the strong approximation of the CIR process.
- 17:00 Uhr:** [Prof. Dr. Klaus Ritter \(RPTU Kaiserslautern\)](#)
Hermite Spaces and Infinite-dimensional Integration
As a numerical problem, infinite-dimensional integration arises in a natural way as the limit of d-dimensional integration, e.g., with respect to a d-dimensional standard normal distribution, as $d \rightarrow \infty$. Moreover, expectations of functionals of stochastic processes, e.g., of a Brownian motion, may often be considered as infinite-dimensional integrals. In this talk we will introduce and study suitable function spaces, in particular tensor products of univariate Hermite spaces, and present a result on optimal deterministic algorithms and complexity for infinite-dimensional integration on these spaces.
This talk is based on joint work with Michael Gnewuch (Osnabrück), Mario Hefter (Kaiserslautern), Aicke Hinrichs (Linz), Robin Rübmann (Kaiserslautern), Greg Wasilkowski (Lexington).

anschließend: Nachsitzung