

Karlsruher PDE-Seminar

Numerical Analysis of the stochastic incompressible Navier-Stokes equations

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I will discuss implementable space-time discretizations of the stochastic incompressible Navier-Stokes equations. In 3D, martingale solutions are constructed by a discretization that is based on the implicit Euler method, and LBB-stable finite elements. The convergence proof rests on a discrete energy law, and uniform control of higher moments of increments of approximates.

In 2D, strong solutions with improved regularity properties are approximated with certain rates by means of new time-splitting schemes which properly address the interplay of general noise and pressure; general LBB-stable finite elements lead to suboptimal convergence behavior for the same reason, which favors exactly divergence free finite elements instead.

This is joint work with Z. Brzezniak (U York) and E. Carelli (U Tuebingen).

Termin: Donnerstag, 7. Juli 2011, 17:30 Uhr

Ort: Raum 1C-03, Allianz Building 05.20

Gastgeber: Die Dozenten des Schwerpunktes Partielle Differentialgleichungen