



KATHOLISCHE UNIVERSITÄT
EICHSTÄTT-INGOLSTADT

Mathematisches Kolloquium

Analysis of Turbulent Flows: Deterministic and Probabilistic Descriptions

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Abstract: Fluids can behave in a highly irregular, turbulent way. It has long been realised that, therefore, some weak notion of solution is required when studying the fundamental partial differential equations of fluid dynamics, such as the Navier-Stokes or Euler equations. The standard concept of weak solution is still a deterministic one, as it gives exact values for the state variables (like velocity or density) for almost every point in time and space. However, observations and mathematical theory alike suggest that this deterministic viewpoint has certain limitations. Thus, there has been an increased recent interest in the mathematical fluids community in probabilistic concepts of solution. We aim here to give an overview of probabilistic formulations of fluid equations, which can roughly be split into measure-valued and statistical frameworks.

**Mittwoch, 15. November 2023, 17.00 Uhr,
Seminarraum des Georgianums, 1. OG,
Hohe-Schul-Str. 5, 85049 Ingolstadt**