



universität
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Fakultät für Mathematik

Mathematisches Kolloquium

Mittwoch, 20. Juni 2018

Sky Lounge

EINLADUNG

Susan Friedlander

(University of South California)

"Kolmogorov, Onsager and a stochastic model for turbulence"

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Abstract: We will briefly review Kolmogorov's (41) theory of homogeneous turbulence and Onsager's (49) conjecture that in 3-dimensional turbulent flows dissipation energy might exist even in the limit of vanishing viscosity. Although over the past 60 years there is a vast body of literature related to this subject, at present there is no rigorous mathematical proof that the solutions to the Navier-Stokes equations yield Kolmogorov's laws. For this reason various models have been introduced that are more tractable but capture some of the essential features of the Navier-Stokes equations themselves. We will discuss one such stochastically driven dyadic model for turbulent energy cascades. We will describe how results for stochastic PDEs can be used to prove that this dyadic model is consistent with Kolmogorov's theory and Onsager's conjecture. This is joint work with Vlad Vicol and Nathan Glatt-Holtz.

15.45 Uhr: Kaffeejause

16.15 Uhr: Vortrag

vinum cum pane im Anschluss

Herwig Hauser
Christian Krattenthaler