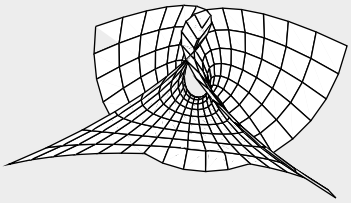

Oberseminar Mathematische Strömungsmechanik

Institut für Mathematik der Julius-Maximilians-Universität Würzburg

Daniel Boutros

University of Cambridge, UK

Nonuniqueness of generalised weak solutions to the primitive and Prandtl equations

Abstract:

The primitive equations model large-scale oceanic and atmospheric dynamics. Based on their anisotropic structure, we introduce several new types of weak solutions to these equations. We develop a convex integration scheme to prove the existence and nonuniqueness of these generalised weak solutions for the inviscid primitive equations in both two and three dimensions. We also develop such a scheme for the construction of nonunique weak solutions to the three-dimensional viscous primitive equations, as well as the two-dimensional Prandtl equations. Moreover, we construct infinitely many examples of generalised weak solutions which do not conserve energy in the inviscid setting.

This is joint work with Simon Markfelder and Edriss S. Titi.

the speaker lectures via Zoom, we will be in room 40.03.003 (Emil Fischer Str. 40)

Thursday, Dec. 7 at 12:30 pm

Zu diesem Vortrag sind Sie herzlich eingeladen.

gez. Christian Klingenberg