



Oberseminar Mathematische Strömungsmechanik

Institut für Mathematik der Julius-Maximilians-Universität Würzburg

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Lecture series: Kinetic approximations of conservation laws

Abstract:

The kinetic representation for fluids goes back to the works of Maxwell and Boltzmann at the end of the 19th century. It is the central tool of statistical physics. At the end of the 20th century, it has been discovered that it is also very interesting for constructing efficient and robust numerical schemes. In this course I will

- present a general kinetic framework inspired from Bouchut's works.
- propose a consistency and entropy analysis of the method
- explain how the kinetic representation can be used to build efficient numerical methods, such as Lattice-Boltzmann schemes, or explicit CFL-less Discontinuous Galerkin solvers
- present several practical applications for compressible flows, MHD, electromagnetism, etc.

seminar room 40.03.003 (Emil Fischer Str. 40)

Tue., Feb. 20; Thurs., Feb. 22 & Fr., Feb. 23, always at 12:30 pm

Zu diesem Vortrag sind Sie herzlich eingeladen.

gez. Christian Klingenberg