



Oberseminar Mathematische Strömungsmechanik

Institut für Mathematik der Julius-Maximilians-Universität Würzburg

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Structure-preserving finite-element schemes for the Euler-Poisson equations

Abstract:

We discuss structure-preserving numerical discretizations for the repulsive and attractive Euler-Poisson equations. The scheme is fully discrete and structure preserving in the sense that it maintains a discrete energy law, as well as hyperbolic invariant domain properties, such as positivity of the density and a minimum principle of the specific entropy.

We discuss the underlying algebraic discretization technique based on collocation and convex limiting that maintain hyperbolic invariants and a discrete energy law, and discuss recovery strategies to maintain the discrete Gauss law. This is joint work with Fatemeh Nassajian Mojarrad, Jan S. Hesthaven and Philipp Öffner

room 40.03.003 (Emil Fischer Str. 40)

Thursday, May 25 at 12:30 pm

Zu diesem Vortrag sind Sie herzlich eingeladen.

gez. Christian Klingenberg