Oberseminar Mathematische Strömungsmechanik

Institut für Mathematik der Julius-Maximilians-Universität Würzburg

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On Alfvén waves in ideal magnetohydrodynamics: global existence and inverse scattering

Abstract:

The Alfvén waves are fundamental wave phenomena in magnetized plasmas. Mathematically, the dynamics of Alfvén waves are governed by a system of nonlinear partial differential equations called the magnetohydrodynamics (MHD) equations. In this talk, we will review some recent results about global existence and inverse scattering of Alfvén waves in ideal MHD. In particular, our inverse scattering results are intended to establish the relationship between Alfvén waves emanating from the plasma and their scattering fields at infinities. The proof is mainly based on the weighted energy estimates.

We will make the talk accessible to non-specialists.

room 40.03.003 (Emil Fischer Str. 40)

Thursday, May. 8, 2025 at 12:30 pm

Zu diesem Vortrag sind Sie herzlich eingeladen.

gez. Christian Klingenberg