Karlsruhe Institute of Technology

Seminar of the Work Group
Nonlinear Partial Differential Equations
WS 22/23

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Seminar room: 3.068

On Echo Chains in Magnetohydrodynamics

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We consider the evolution of the magnetohydrodynamic (MHD) equations with magnetic dissipation in a periodic channel near an affine flow and a constant magnetic field. Here we, in particular, aim to capture resonances between high and low frequency perturbations, which are known as echoes. More precisely, we construct explicit low frequency waves and study high frequency (chains of) resonances and resulting norm inflation in the linearized problem around these waves. The magnetic field here is shown to have a large effect on the behavior of resonances as compared to the Euler setting.

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