Seminar of the Work Group
Nonlinear Partial Differential Equations
WS 25/26

November 12th, 2025, 11:30 - 13:00
Seminar room: SR 3.069

Dissipative Euler Flows Originating from Circular Vortex Filaments

Antonio Hidalgo, MPI Leipzig

Abstract

In this talk, we will review some results and heuristics of vortex filaments in the 3D Euler and Navier-Stokes equations. Then, we will show the existence of Euler solutions with a strict vortex filament as initial data. More specifically, we will use convex integration to prove the existence of infinitely many weak solutions to the 3D Euler equations with initial vorticity supported on a circumference. We are able to impose some nice properties on our solutions such as having compactly supported vorticity and decaying energy. This is a joint work with Francisco Gancedo and Francisco Mengual.