



Seminar of the Work Group
Nonlinear Partial Differential Equations
SS 2021

Speaker: Prof. Stefano Modena
July 2, 2021, 14:00 - 15:30
Zoom Link: <https://kit-lecture.zoom.us/j/7143665630>
Meeting ID: 714 366 5630

Non-uniqueness for the transport equation with Sobolev vector fields

TU Darmstadt

Abstract

One of the main questions in the theory of the linear transport equation is whether uniqueness of weak solutions to the Cauchy problem holds in the case the given vector field is not smooth. In the talk I will show that even for incompressible, Sobolev (thus quite “well-behaved”) vector fields, uniqueness of solutions can drastically fail. This result can be seen as a counterpart to DiPerna and Lions’ well-posedness theorem (joint with G. Sattig and L. Székelyhidi).