



Lothar-Collatz-Kolloquium für Angewandte Mathematik

Donnerstag, den 28. May 2026, um 14:30 Uhr, im Hörsaal 2

Prof. Dr. Giuseppe Maria Coclite*

(Polytechnic University of Bari, Department of Mechanics, Mathematics and Management)

Vanishing viscosity versus Rosenau approximation for scalar conservation laws: the fractional case

Zusammenfassung/Abstract:

In this talk we consider approximations of scalar conservation laws by adding nonlocal diffusive operators. In particular, we consider solutions associated to fractional Laplacian and fractional Rosenau perturbations and show that, for any $\epsilon > 0$, the mutual L^1 distance of their profiles is negligible as compared to their common distance to the underlying inviscid entropy solution.

We provide explicit examples showing that our rates are optimal in the supercritical and critical cases, in one space dimension and for strictly convex fluxes. For subcritical equations, our rates are not optimal but they remain explicit.

Those results were obtained in collaboration with N. Alibaud, M. Dalery, and C. Donadello.

Kontakt:

Prof. Dr. Ingenuin Gasser

Angewandte Mathematik

Raum 131, Tel.: 040 2395-25128

E-Mail: ingenuin.gasser@uni-hamburg.de

Web: <https://www.math.uni-hamburg.de/forschung/bereiche/am/modellierung/personen/gasser-ingenuin.html>

* Prof. Dr. Giuseppe Maria Coclite

Polytechnic University of Bari, Department of Mechanics, Mathematics and Management

E-Mail: giuseppemaria.coclite@poliba.it

Web: <https://www.dmmm.poliba.it/index.php/it/profile/gmcoclite>