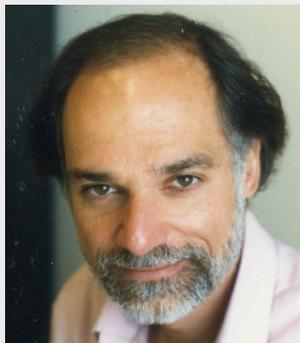# NEWSLETTER

of the Work Group Mathematical Fluid Mechanics

Newsletter no. 2 (2026)

news about new Bachelor thesis students

Julius Krotsch begins his Bachelor thesis with us

Julius Krotsch has begun to work on his Bachelor thesis with us. He wants to work on the theory of partial differential equations of conservation laws. He will learn about the existence of weak solutions for the Euler equations with large initial data in one space dimensions using the method of compensated compactness.

This is Ron DiPerna (1947 – 1989). His development and application of the method of compensated compactness is his best know work.

Christian Kraus begins his Bachelor thesis with us

Christian Kraus has just decided to begin his Bachelor thesis with us. He plans to work on the derivation of the Euler equations and aspects of its numerical implementation.

Junming Duan will visit us May 13 - 24

Junming Duan has been a post-doc with us until the end of last year with a Humboldt Fellowship. He now is an assistant professor at the Chinese University of Hong Kong, Shenzhen. He has contributed to our Active Flux effort.

Junming plans to visit us in Würzburg May 13 - 24, 2026. Afterwards he will go to attend the HYP2026 conference in Stuttgart.

Fritz Röpke visits us

On Monday, March 2 *Fritz Röpke* with about 5 of his collaborators plans to visit us in Würzburg for the day. Fritz and myself have collaborated for many years quite fruitfully. Throughout the day on Monday we will give presentations in order to get to know each others work more closely.

Giovanni Leidi will join our group this summer.

Some members of Fritz Röpke's work group. Fritz is on the far left, Giovanni Leidi in the front center (in green).

A new cooperation with Los Alamos

The _Los Alamos National Lab_ has a small outpost of researchers at the University of Michigan in Ann Arbor. Last year, when I visited Phil Roe, Phil and myself met with them and got them quite interested in the Active Flux method. Subsequently, Los Alamos has awarded a grant to the Michigan Los Alamos group to conduct research on applying the Active Flux method to multi-species hydrodynamic equations. The project begins March 1, 2026 lasts for 3 years.

Würzburg will be part of this effort.

HYP 2026 in Stuttgart

Some members of our extended work group have requested to present a talk at the _HYP 2026 conference_ in May in Stuttgart. These talks were accepted:
- Simon Krotsch,
- Yu-Chen Cheng
- Nikhil Manoj
- myself
- Wasilij Barsukow (Bordeaux)
- Junming Duan (Shenzhen, China).
Also Sophie Lauer will attend this conference.

Our Fasching seminar in February

For our Thursday seminar followed by a social meeting with cake on Feb. 12 (the last Thursday before the end of carnival) we dressed up, had fun and ate Faschingskrapfen.

Upcoming scientific conferences

Click on the links and check where you might want to participate.

- March 23 - 27, **2026**: _Hyperbolic problems – a comprehensive approach_, in Würzburg, Germany, organized by Wasilij Barsukow, Simon Markfelder, Marlies Pirner, Fritz Röpke, Emil Wiedemann

- March 25 - 27, 2026: _5th European Conference on Non-Equilibrium Gas Flows_ (NEGF26), in Toulouse, France, organized by Stéphane Colin among others

- March 30 - April 4, 2026: _International Conference on high-order nonlinear numerical methods for evolutionary PDE_ (HONOM) in Trento, Italy, organized by Michael Dumbser

- May 4 - 8, 2026: _Sharing Higher order Advanced Research Known-how on Finite Volume_ (SHARK-FV 2026) in Minho, Portugal, organized by Raphael Loubère and others

- May 25 - 29, 2026: _20th International Conference on Hyperbolic Problems (HYP2026)_: Theory, Numerics and Applications, in Stuttgart, Germany organized by Maja Lukacova und Christian Rhode

- June 1 - 5, 2026: _Perspectives on Multiphase Fluid Dynamics, Continuum Mechanics and Hyperbolic Balance Laws_ (ProHyp2026), in Strasbourg, organized by Philippe Helluy and others

- June 7 - 13, 2026: Summer School _"Methods & Models of Kinetic Theory"_, in Pesaro (Italy), organized by Maria Groppi and others

- June 21 - 26, 2026: _Solving ultimate challenges and network building: a coding and modelling week on and beyond hyperbolic equations_ (SunHyp 2026) in Chania, Crete, organized by Elena Gaburro

- July 19 - 24, 2026: _17th World Congress on Computational Mechanics & 10th European Congress on Computational Methods in Applied Sciences and Engineering_, in Munich, Germany

- Sept. 7 - 11, 2026: _12th International Conference on Numerical Methods for Multi-Material Fluid Flow_ (MultiMat 2026) at Biarritz, France, organized by Raphael Loubère and others

- Feb. 22 – 26 , **2027**: _SIAM Conference on Computational Science and Engineering (SCE27)_, in Pittsburgh, Penn., USA.

- mid June 2027: Numerical Methods for Hyperbolic Problems (NumHyp 2027), in Verona 2027 organized by Elena Gaburro

- 5 - 9 July 2027: _International Conference on Spectral and High-Order Methods_ (ICOSAHOM 2027), in Milan organized by Marco Verani, Paola Antonietti and others

Here you can see us on on that day:

from l.t.r.: Johannes Roth, James Nguyen, Nadine Braxmeier-Even, Giacomo Lorelli, Julius Krotsch, Mengni Li, Nikhil Manoj, Yu-Chen Cheng