

NEWSLETTER

of the Work Group Mathematical Fluid Mechanics

Newsletter no. 18 (2025)

News about conferences:

WCCM-ECCOMAS 2026

The *17th World Congress on Computational Mechanics & 10th European Congress on Computational Methods in Applied Sciences and Engineering* are two concurrent and also recurring conferences on computational mechanics. They could be described as the applied mathematics counterpart to computational engineering. Topics include numerical methods for the PDEs of continuum mechanics. It will be held next in Munich July 19 - 24, 2026.

Walter Boscheri and others are organizing a mini-symposium "*Structure preserving numerical methods for nonlinear hyperbolic systems*", to which they invited me to give a talk.



Registration open for the hyperbolic conference in Würzburg im March 2026

Registration is now open for the conference *Hyperbolic problems - a comprehensive approach* March 23 - 27, 2026 in Würzburg, Germany.

Please go ahead and register!

Lena Baumann successfully defended her PhD thesis

On Nov. 26, 2025 *Lena Baumann's* PhD defense took place. Her opponents were *Lukas Einkemmer*, Komla Domelevo and myself. First she gave a well prepared lecture of her PhD work. Afterwards there were 40 minutes of questions which she answered without difficulties, so that she successfully passed.

There were many attendees, including her family and a number of former members of the work group. They celebrated with her first during a reception and then at a nice and lively dinner party.

Lena will now leave academia and look for a job in industry.

All the best to you, Lena!



Lena is relieved after her PhD defense successfully is over



The top of Lena's graduation cap: the tracks beginning at the bottom left show her path towards a PhD. The yellow sign posts are way stations (conferences and scientific visits), beginning with Oberwolfach. The cake symbolizes her responsibility for organizing the cake of our weekly meetings by the work group. This is topped by her clarinet. The blue book is her PhD thesis, with QR codes inside, leading to her six papers.

The bottom of the PhD cap for Lena. Here a central aspect of the dynamical low rank method is illustrated. Between the skull cap and the flat square top is the green low rank solution manifold, with the flat top being the tangent plane to it. The skull cap is plastered with pictures mainly from her academic travels as a PhD student.



News about new web pages:

The Active Flux workshop in Shenzhen has a web page

Both Wasilij Barsukow and Junming Duan will give lectures in the upcoming Shenzhen workshop on Active Flux, which now has a web page, [see here](#).

Kathrin Helmuth has a new home page

Having moved to Caltech, Kathrin now has a new web page, see [here](#).

My visit to the SIAM Conference on PDEs

The *SIAM Conference on Analysis of Partial Differential Equations* (SIAM PD25), was held in Pittsburgh, USA Nov. 17 - 20, 2025. Most talks there were contributed series of talks in mini-symposia. [Simon Markfelder's](#) and my mini-symposium was called "What are good solution concepts for the PDEs of fluid mechanics?" and consisted of 7 lectures, by [Eduard Feireisl](#), [Alexis Vasseur](#), [Sam Krupa](#), Simon, myself and others. It was well attended.

Throughout the conference it was easy to find good and interesting lectures, also covering kinetic equations. I met many researchers, both familiar (see some of them in the two pictures below) and some new to me. Kathrin Hellmuth was also there.



Mengni Li Kathrin Hellmuth myself Simon Markfelder

Upcoming scientific conferences

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

- December 6 - 8, **2025**: [Active Flux Methods: Developments and Applications](#), in Shenzhen, China, organized by Rémi Abgrall and Alexander Kurganov and others
- Dec 15 - 17, 2025: [XIX Winter Workshop on Stellar Astrophysics 2025](#), organized by Fritz Röpke in Heidelberg
- 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 and others
- May 4 - 8, 2026: [Sharing Higher order Advanced Research Knowledge 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 Maria Lukacova und Christian Rhode
- June 7 - 13, 2026: Summer School "[Methods & Models of Kinetic Theory](#)", in Pesaro (Italy), organized by Maria Groppi and others
- July 19 - 24, 2026: [17th World Congress on Computational Mechanics & 10th European Congress on Computational Methods in Applied Sciences and Engineering \(WCCM-ECCOMAS\)](#), 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
- mid June **2027**: Numerical Methods for Hyperbolic Problems (NumHyp 2027), in Verona 2027 organized by Elena Gaburro
- late June/early July 2027: International Conference on Spectral and High-Order Methods (ICOSAHOM 2027), in Milan organized by Marco Verani among others



left, bottom to top: Eduard Feireisl, myself, Lorenzo Micalizzi
right, top to bottom: Alex Kurganov, Alina Chertok, Agnieszka Swierczewska Gwiazda, Maria Lukacova