NEWSLETTER

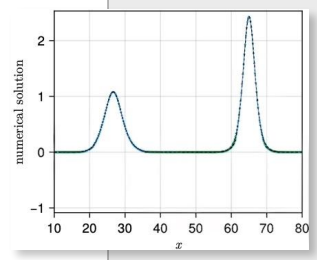
of the Work Group Mathematical Fluid Mechanics

Newsletter no. 13 (2026)

Simon Krotsch submitted a paper

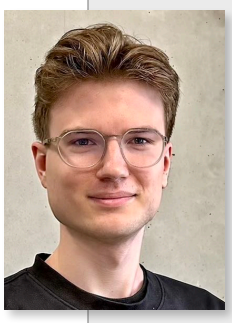
Simon Krotsch submitted the paper *Simon Krotsch, Wasilij Barsukow, Christian Klingenberg: "Asymptotic preserving IMEX Active Flux schemes for a hyperbolic approximation of the Korteweg-de Vries equation"*.

Here he solves the 3rd order Korteweg-de-Vries partial differential equation (KdV) using the Active Flux method. He achieves this by rewriting the scalar KdV as a 1st order hyperbolic system and solving this quite efficiently.



The numerical solution (green) of two traveling waves of Korteweg-de-Vries after they have passed through each other. In this figure the green curve sits on top of the exact solution.

Simon Krotsch begins his PhD



Simon Krotsch

Simon Krotsch finished his Master's thesis with us. During that time he developed a strong interest in the numerical Active Flux method and was quite productive - *see here*.

Now he begins his PhD thesis as part of the priority program on hyperbolic problems by the German Science Foundation (DFG).

We wish him good luck and ongoing success!

We visited Wasilij Barsukow in London

Wasilij Barsukow is part of a German Science Foundation (DFG) project we have on the numerical Active Flux method. Wasilij and myself have co-authored 14 papers/preprints. Usually he is in Bordeaux, but this year he is at Imperial College in London.

The week Oct. 3 - 10, 2026 Simon Krotsch and myself visited Wasilij Barsukow in London for collaborating in person. Besides work we also found time to explore London, visit museums and go to a concert at Wigmore Hall.



Myself, Wasilij Barsukow and Simon Krotsch in the City of London

Upcoming visitors

These science guests will visit us in Würzburg this year. Both will make presentations in our Thursday seminar:



Stefano Muzzolon

Nov. 17 - 20, 2026: Stefano Muzzolon (Univ. of Verona, Italy)

Stefano is a PhD student with Elena Gaburro in Verona, Italy, for two years now. He works on numerics for conservation laws, and numerically solves the relativistic Euler equations on an unstructured mesh using the Discontinuous Galerkin method.

Nov. 25 - 27, 2026: Gudrun Grünwald (University Bochum)

Gudrun will have just defended her PhD thesis at the time of her visit. She applies the numerical Active Flux method to kinetic equations, namely the Vlasov Maxwell equation. She has two papers/preprints on this topic.



Gudrun Grünwald

I will visit Junming Duan in China in January

Junming Duan was a Humboldt postdoc with us for two years (2023 - 25). From that time on he has made significant contributions to developing the Active Flux method. He now is a tenure-track professor at the Shenzhen branch of The Chinese University of Hong Kong.

He has invited me to visit him January 4 - 15, 2027. I plan to also visit the Southern University of Science and Technology in Shenzhen.

As seen on the map below, Shenzhen is not too far from Hong Kong, which I will also visit.



ICOSAHOM 2027 mini symposium accepted

The *International Conference on Spectral and High-Order Methods* (ICOSAHOM 2027) will take place July 5 - 9, 2027 in Milano. We submitted a proposal for a mini-symposium there, "The Active Flux method: theory, numerics and applications ", which has been accepted. We hope that the lectures of this mini-symposium will highlight the achievements of this method.

The last ICOSAHOM in Montréal in 2025 was the final conference Phil Roe (1938–2026) attended to give a talk in the Active Flux mini-symposium we had organized there.

Upcoming scientific conferences

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

- Nov. 9 - 11, 2026: 2nd workshop *Mathematics for planet Earth (M4E)* in Milano, Italy.
- Feb. 22 – 26 , **2027**: *SIAM Conference on Computational Science and Engineering (SCE27)*, in Pittsburgh, Penn., USA.
- March 12 - 15, 2027: *24th IACM (International Association for Computational Mechanics) Computational Fluids Conference* in Yokohama, Japan
- May 17 - 19, 2027: *Phil Roe Symposium,* in Ann Arbor, Mich. USA, organized by Karthik Duraisamy, myself and others
- June 20 - 25, 2027: *Numerical Methods for Hyperbolic Problems (NumHyp 2027)*, in Verona 2027 organized by Elena Gaburro
- July 5 - 9, 2027: *International Conference on Spectral and High-Order Methods* (ICOSAHOM 2027), in Milan organized by Marco Verani, Paola Antonietti and others
- July 12 – 16, 2027: *11th International Congress on Industrial and Applied Mathematics (ICIAM)*, in The Hague, The Netherland
- Aug. 30 - Sept. 3, 2027: *16th European Conference on Numerical Mathematics and Advanced Applications* (ENUMATH) in Padova, Italy.

Mengni Li ended her Humboldt stay early

Mengni Li began her post-doc stay with us in February 2026, with the intention of staying for two years. She was paid for by the Humboldt Foundation. Unfortunately her stay did not meet the expectations set out by Humboldt, part of which is to collaborate with the host institution. These disagreements likely contributed to her abrupt decision to return back to China, and break off the Humboldt fellowship, without prior announcement. Following her departure, the remaining funding for the Humboldt Fellowship was revoked.

This shows how important it is for international fellows and host institutions to share their expectations.



