NEWSLETTER

of the Work Group Mathematical Fluid Mechanics

Newsletter no. 3 (2026)

News about new publications

Paper by Yu-Chen Cheng submitted

The paper *Yu-Chen Chen, Praveen Chandrashekar, Christian Klingenberg: "A low-dissipation central scheme for ideal MHD"* has been submitted to a journal.

Here an idea of Kurganov (he improves the simulation of contact discontinuities for Euler) was extended to ideal magnetohydrodynamics.

Kathrin Hellmuth's book in Springer Verlag ready for publication

The topic Kathrin Helmuth's Phd thesis broke new ground, it studied well-posed PDE parameter identification problems. Springer Verlag will now publish a modified version of her thesis as a monograph: *On Qualitative Experimental Design for PDE Parameter Identification - An Application to the Kinetic Chemotaxis Inverse Problem*. It will be published this year.

Paper by Marlies and Sandra accepted

The paper *Bae, Gi-Chan; Pirner, Marlies; Warnecke, Sandra: Numerical schemes for a multi-species quantum BGK model* has been accepted for publication in Communications in Mathematical Sciences. The scheme developed in Sandra Warnecke's Phd thesis is applied here to a kinetic quantum model.

The Würzburg conference on hyperbolic problems begins in one week

The conference *Hyperbolic problems – a comprehensive approach* will take place in Würzburg March 23 - 27. During 5 days there will be around 50 lectures in addition to socializing events. Guests from many countries will attend. Quite a few of them I have collaborated with. Also several former PhD students will attend. This will make the week of the conference a joyous occasion for me to celebrate with everyone.

Hyperbolic problems – a comprehensive approach

The aim of this conference is to bring together leading scientists in the field of analysis, numerics, and applications of hyperbolic partial differential equations.

March 23 - 27, 2026

in Würzburg, Germany
building of the GSST
Campus Hubland Nord

a conference on the occasion of Christian Klingenberg's 70th birthday

https://indico.math.cnrs.fr/e/comprehensive26

invited speakers:
Rémi Abgrall (Switzerland)
Christophe Berthon (France)
Walter Boscheri (France)
Gui-Qiang G. Chen (England)
Praveen Chandrashekar (India)
Bruno Després (France)
Michael Dumbser (Italy)
Lukas Einkemmer (Austria)
Eduard Feireisl (Czech Rep.)
Elena Gaburro (Italy)
Philippe Helluy (France)
Christiane Helzel (Germany)
Shi Jin (China)
Philippe LeFloch (France)
Maria Lukacova (Germany)
Qin Li (USA)
Carlos Parés (Spain)
Gabriella Puppo (Italy)
Nils-Henrik Risebro (Norway)
Wolfram Schmidt (Germany)
Chi-Wang Shu (USA)
Eric Sonnendrücker (Germany)
Volker Springel (Germany)
Min Tang (China)
Yinhua Xia (China)

organizers:
Wasilij Barsukow
Simon Markfelder
Marlies Pirner
Fritz Röpke
Emil Wiedemann

sponsors:
HITS
DFG
FAU

contact:
comprehensive26@listes.math.u-bordeaux.fr

the poster for the hyperbolic conference in Würzburg

Wasilij Barsukow visits us March 15 - 28

Wasilij Barsukow

Wasilij Barsukow (he is *CNRS* researcher in France, currently at Imperial College in London) will visit Würzburg for two weeks. He will work with us the first week, and then attend the conference mentioned above for the second week. He is one of the organizers of this conference.

We have a joint project (funded by the German Science Foundation DFG). This will be one of our bi-yearly exchange visits that in the past have been scientifically quite fruitful.

News about a new thesis student

Anna Kircher begins her Bachelor thesis with us

Anna Kircher

Anna Kircher is a Bachelor student in Mathematical Data Science. She began to work on her Bachelor thesis with us. She will work on selecting parameters in inverse problems using matrix sketching. Kathrin Hellmuth is lending a helping hand.

News about an upcoming conference
ICIAM 2027

About 40 years ago, the idea of establishing an applied mathematics counterpart to the highly esteemed *International Congress of Mathematics* (ICM) was conceived, leading to the first *International Congress on Industrial and Applied Mathematics* (ICIAM) taking place in 1987. Like its famous older brother, the ICIAM also takes place every four years.

From 12 to 16 July 2027 in The Hague, The Netherlands the *11th International Congress on Industrial and Applied Mathematics* (ICIAM 2027) will be held. The congress, covering all fields of applied mathematics, will gather the global community of applied and industrial mathematicians and typically several thousand participants attend.

While the ICM awards the prestigious *Fields medal*, the ICIAM doesn't have such a renowned prize. Nevertheless, it has several coveted prizes, and one eagerly anticipates the recipients.

Newsletter no. 3 (2026) (two pages)

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

- 12 – 16 July 2027: *11th International Congress on Industrial and Applied Mathematics (ICIAM)*, in The Hague, The Netherlands

Webinar by the journal Computation

In October of last year we held a small webinar on the Active Flux method organized by the journal *Computation*, for information *click here*. You can now find the lectures on YouTube by *clicking here*.

Computation 2025 Webinars

Genuinely Multi-Dimensional Numerical Scheme for Conservation Laws
28 October 2025, 3:00 pm (CET), 10:00 am (EDT)

the announcement of the webinar