

NEWSLETTER

of the Work Group Mathematical Fluid Mechanics

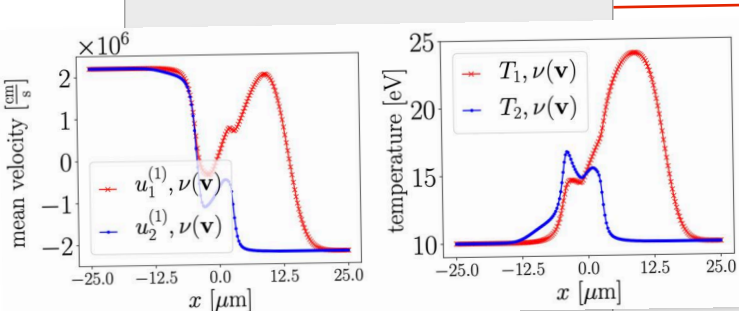
Newsletter no. 8 (2022)

Sandra Warnecke submitted her PhD thesis

Sandra submitted her PhD thesis "Numerical schemes for multi-species BGK equations based on a variational procedure - applied to multi-species BGK equations with velocity-dependent collision frequency and to quantum multi-species BGK equations".

This work originated from a collaboration with Cory Hauck and Jeff Haack (both from the USA). The numerical implementation of a generalization of Marlies Pirner's model was achieved.

Below two counter-streaming beams of two different species hydrogen (red) interpenetrate with helium (blue). The hydrogen penetrates much further into the right side of the domain when the collision frequency is velocity-dependent (compared to constant collision frequency), which physically is correct.



Glimm speaks in the Oberseminar on Friday

On Friday, April 22, James Glimm (age 88) will speak in our Zoom Oberseminar. He is one of the most important mathematicians not only in our field, but also in theoretical physics (quantum field theory).

In his lecture he will talk about progress in finding admissibility conditions for solutions of the multi-dimensional Euler equations.

He was my first post-doc advisor after my PhD.



Simon's second child was born on Easter

On Easter Sunday, April 17, Sophia was born to Simon Markfelder and his wife. Everyone (child and parents) are doing well and the parents are overjoyed.



Last week I co-organized an Oberwolfach workshop

Last week together with colleagues I organized an Oberwolfach [workshop on structure preserving numerical methods](#). You can download the schedule with the videos of the lectures [here](#).

Given the interesting lectures, the great interaction, it truly was Oberwolfach heaven on earth.

Upcoming scientific conferences

Go ahead and click the links to check where you might want to participate.

- Jan. 10 - June 24, 2022: [Frontiers in kinetic theory: connecting microscopic to macroscopic scales - KineCon 2022](#) , a one semester program organized at the Newton Institute at Cambridge University with 5 one week workshops in this time
- May 11 - 13, 2022: [High-order Time Discretization Methods for PDEs](#), on the island of Capri, Italy, organized by Lorenzo Pareschi, Giovanni Russo and others
- May 16 - 20, 2022: [The Boltzmann Equations: in the trail of Torsten Carlemann](#), near Stockholm, Sweden
- May 23 - 29, 2022: [Sharing Higher-order Advanced Research Knowledge on Finite Volume \(SHARK-FV\)](#) in Portugal, organized by Raphael Loubère und Stephane Clain
- June 12 - 18, 2022: [Summer School on "Methods and models of kinetic theory"](#) organized by Marzia Bisi (Parma) among others
- June 20 - 25: HYP2022: [18th International Conference on Hyperbolic Problems, Theory, Numerics, Applications](#) - Part 2 (formerly HYP 2020), in Malaga, Spain, organized by Carlos Pares
- June 19 - 24, 2022 ["Numerical methods for kinetic equations"](#) a *summer school* by Eric Sonnendrücker and Lukas Einkemmer in the alps in Italy
- June 27 - July 1, 2022: [Hyperbolic balance laws & beyond](#), in Magdeburg, organized by Helzel and Lukacova
- July 18 - 22, 2022: [When Kinetic Theory meets Fluid Mechanics](#), in Zürich, organized among others by Alexis Vasseur
- Aug. 22 - 26, 2022: [10th International Conference on Numerical Methods for Multi-Material Fluid Flow \(MULTIMAT 2021\)](#) in Zürich, organized by Remi Abgrall and others
- Sept. 12 - 14, 2022: [Nils Henrik Risebro birthday conference](#) in Oslo, organized among others by Fjordholm, Holden, Mishra
- Sept. 26 - 30, 2022: [Horizons in non-linear PDEs](#), a *summer school* in Ulm, organized by Emil Wiedemann and others
- Oct. 9 - 14, 2022: [Computation of hyperbolic and related PDEs: A conference in honor of Remi Abgrall](#), organized by Sid Mishra at ETH Zurich on Monte Verità (Ascona, Switzerland)
- Sept.. 19 - 23, 2022: [12th European Conference on Mathematical and Theoretical Biology](#) in Heidelberg, organized by Anna Marciniak (Heidelberg) and others
- Nov. 14 - 18, 2022: [Kinetic Theory](#), in Luminy (near Marseille, France), organized by José Carillo, Markus Schmittchen and others

