

# NEWSLETTER

## of the Work Group Mathematical Fluid Mechanics

*Newsletter no. 1 (2022)*

### **Paper by Marlies Pirner and others submitted**

A paper by Marlies and others : [G. Bae, C. Klingenberg, M. Pirner, S. Yun: "Mixture BGK model near a global equilibrium", submitted \(2022\)](#) has been submitted.

Existence of solutions to the multi-species kinetic model from Marlies' thesis still is work in progress. This paper deals with existence of the solution once it is near its global equilibrium.

### **Paper by Claudius Birke submitted**

The paper [Claudius Birke and Christian Klingenberg: "Finding an Approximate Riemann Solver via Relaxation: Concept and Advantages, submitted \(2021\)](#) has been submitted. If accepted it will be a conference proceedings.

It give a clear introduction to the concepts underlying his recently submitted [paper](#) on a low Mach and well-balanced scheme for Euler with gravity.



### **Happy New Year 2022**

This year both Farah Kanbar and Sandra Warnecke plan to defend their thesis. Wishing them and everyone else success in their pursuits.



### **Marlies submitted an an ERC grant proposal**

The [European Research Council](#) (ERC) pays grants to excellent scientists. These grants typically pays one's own salary for five years plus funds for PhD and post-doc students.

One type of grant is the [ERC starting grant](#), which is what Marlies Pirner applied for. These grants are quite competitive. For those people, whom grant is awarded to, it is an important stepping stone in their career.

Good luck, Marlies!

## Veronika Mayerhofer's Master thesis jointly with Norway



Veronika Mayerhofer will begin to work her Master thesis with us. Ulrik Fjordholm from Oslo University agreed to be the co-supervisor. In particular Veronika will spend some months at Oslo University with an Erasmus internship.

Ulrik Fjordholm  
from Oslo University



## One week visitor Giovanni Leidi

For the first time since March 2020 we have had an academic visitor staying for as long as a week. Giovanni Leidi from Heidelberg came to work with Claudius.



Entrance to the IHP  
building in the center  
of Paris.

## Wasilij has been invited to Paris

Wasilij Barsukow has been invited to a *workshop* at the Institut Henri Poincaré (IHP) in Paris.

The IHP is a little bit like a Parisian Oberwolfach. It has emphasis trimesters and workshops. Two weeks ago Kathrin and myself attended a math-biology workshop there.

## 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
- Jan. 24 - 25, 2022: [Computational Fluid Mechanics](#) at the Poincaré Institute in Paris, co-organized by Bruno Després and many others
- Feb. 14 - 18: [Rigorous analysis of incompressible fluid models and turbulence](#) organized among others by Anna Mazzukato and Edriss Titi
- Mar. 7 - 9, 2022: [Workshop on inverse problems in biology](#), at the Poincaré Institute in Paris, co-organized by Marie Doumic
- March 7 - 11, 2022: [Perspectives on Multiphase Fluid Dynamics, Continuum Mechanics and Hyperbolic Balance Laws](#) in Luminy near Marseille, France, organized among others by Dumbser and Warnecke
- March 14 - 18, 2022: [SIAM Conference on Analysis of Partial Differential Equations online](#), organized by Sid Mishra and Emil Wiedemann
- May 16 - 20, 2022: [The Boltzmann Equations: in the trail of Torsten Carlemann](#), near Stockholm, Sweden
- April 4 - 8, 2022: [HIGH ORDER NONLINEAR NUMERICAL METHODS FOR EVOLUTIONARY PDEs: THEORY AND APPLICATIONS \(HONOM\)](#) in Braga, Portugal, organized by Raphael Loubère und Stephane Clain
- April 10 - 15, 2022: [Structure preserving discretizations](#), in Oberwolfach, organized by Bruno Després, Michael Dumbser, myself
- 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
- 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)