

A workshop on

Recent Advances in Kinetic Theory and Fluid Dynamics Models

in honour of Claude Bardos recognizing his significant contribution to the field of nonlinear Partial Differential Equations

Programme

www



programme



book of abstracts



SIMONS
FOUNDATION



Institute of Mathematics
Polish Academy of Sciences

Monday 8.08.2022

- 10:15 **Welcome**
- 10:30 – 11:20 **Yann Brenier**
Einstein's equations in vacuum viewed as a matrix-valued generalization of the Euler equations of isothermal gases.
- 11:30 – 12:00 coffee break
- 12:00 – 12:50 **François Golse**
Radiative Transfer in Fluids: From Mathematical Analysis to Numerical Simulations
- 13:00 – 15:00 lunch
- 15:00 – 15:25 **Maja Szlenk**
Weak solutions for the Stokes system for compressible non-Newtonian fluids with unbounded divergence
- 15:30 – 15:55 **Jakub Woźnicki**
Weak-strong uniqueness for density dependent, incompressible, non-Newtonian fluids
- 16:00 – 16:30 coffee break
- 16:30 – 17:20 **Nicolas Besse**
Stochastic Lagrangian perturbation of Lie transport and applications to dissipative fluids

Tuesday 9.08.2022

10:00 – 10:50

Peter Constantin

Pressure, Structure Functions and Singularities

11:00 – 11:25

Jakob Möller

Semiclassical limit for the Pauli-Poisson: by Wigner and WKB to Vlasov and Euler

11:30 – 12:00

coffee break

12:00 – 12:50

Aseel Farhat

Intermittency in turbulence and the 3D Navier-Stokes regularity problem

13:00 – 15:00

lunch

15:00 – 15:50

Tomasz Dębiec

Incompressible limit for a two-species tumour growth model

16:00 – 16:30

coffee break

Wednesday 10.08.2022

10:00 – 11:00 **Nader Masmoudi**
Reversal in the Stationary Prandtl Equations

11:00 – 11:25 **Charles Elbar**
From Vlasov equation to degenerate nonlocal
Cahn-Hilliard equation

11:30 – 12:00 coffee break

12:00 – 12:50 **Emil Wiedemann**
Some Remarks on Vanishing Viscosity,
Anomalous Dissipation, and Boundary Effects

13:00 lunch

20:00 conference dinner

Thursday 11.08.2022

10:00 – 10:50

Peter Markowich

Emergence of biological transportation networks as a self-regulated process

11:00 – 11:25

Erika Maringová

On implicit constitutive relations to parabolic problems

11:30 – 12:00

coffee break

12:00 – 12:50

Alexis Vasseur

Boundary vorticity estimate for the Navier-Stokes equation and control of layer separation in the inviscid limit

13:00 – 15:00

lunch

15:00 – 15:50

Discussion

16:00 – 16:30

coffee break

16:30 – 17:20

Piotr Mucha

New construction of weak solutions to the compressible Navier-Stokes equations

Friday 12.08.2022

- 10:00 – 10:50 **Saber Trabelsi**
On a Multiconfiguration Model of Quantum Chemistry
- 11:00 – 11:25 **Jakub Skrzeczkowski**
Degenerate Cahn-Hillard equation: from non-local to local
- 11:30 – 12:00 coffee break
- 12:00 – 12:50 **Norbert Mauser**
Quantum/Generalized HydroDynamics
- 13:00 – 15:00 lunch
- 15:00 – 15:50 **Aneta Wróblewska-Kamińska**
From compressible Navier-Stokes with nonlocal forces to Euler - relative entropy method
- 16:00 – 16:30 coffee break