

Workshop on **Hyperbolic Differential Equations, Calculus of Variations and Applications**

July 17-19, 2024, at Foundation for Research and Technology – Hellas (FORTH) in «Costas Fotakis» Meeting Room of main building (1st floor)

Organizers: Charalambos Makridakis, Athanasios Tzavaras

Schedule

Wednesday July 17th

- | | |
|---------------|--|
| 9:25 – 9:30 | Opening Remarks |
| 9:30 – 10:05 | Constantine Dafermos, Brown University
Zero Relaxation Limit in BV |
| 10:10 – 10:45 | Nicholas Alikakos, Univ. of Athens
Multi-phase minimizers for the Allen-Cahn system on the plane |
| 10:50 – 11:30 | Coffee Break |
| 11:30 – 12:05 | Agissilaos Athanassoulis, Univ. of Dundee
Why 99.8% of the time there are no Rogue Waves in the North Atlantic (The answer is Landau damping) |
| 12:10 – 12:45 | Athanasios Chatzikaleas, Universitat Münster
Islands of stability and periodic waves in the Anti-de Sitter spacetime |
| 12:50 – 2:30 | Lunch Break |
| 2:30 – 3:05 | Cleopatra Christoforou, Univ. of Cyprus
On hyperbolic balance laws with application to self-organized systems of Euler-type |
| 3:10 – 3:45 | Grigorios Fournodavlos, Univ. of Crete
Global stability of cosmological fluids with extreme tilt |
| 3:50 – 4:30 | Coffee Break |
| 4:30 – 5:05 | Myrto Galanopoulou, Univ. of Sussex
Grain boundary compatibility for martensitic phase transformations |
| 5:10 – 5:45 | Athanasios Tzavaras, KAUST
Oscillations in hyperbolic-parabolic systems and the issue of homogenization |

Thursday July 18th

- 9:30 – 10:05 Panagiota Daskalopoulos, Columbia University
Mean Curvature flow Singularities
- 10:10 – 10:45 Stefanos Georgiadis, KAUST and TU Vienna
Renormalized solutions for the Maxwell-Stefan system with an application to uniqueness of weak solutions
- 10:50 – 11:20 Coffee Break
- 11:20 – 11:55 Emmanouil Georgoulis, Herriot Watt Univ and Natnl Techn. Univ of Athens
Hypocoercivity-preserving Galerkin discretisations of kinetic equations
- 12:00 – 12:35 Ioannis Giannoulis, Univ. of Ioannina
Higher order corrections to the approximation of the 2d dual semi-geostrophic equation by the Euler vorticity equation
- 12:40 – 2:40 **Lunch Break**
- 2:40 – 3:15 Konstantinos Koumatos, Univ. of Sussex
On the role of quasiconvexity in dynamics
- 3:20 – 3:55 Dionyssis Mantzavinos, Univ. of Kansas
Initial-boundary value problems for nonlinear Schrödinger-type equations
- 4:00 – 4:30 Coffee Break
- 4:30 – 5:05 Nikiforos Mimikos, Univ. of Chicago
Sharp convergence rates for mean field control in the region of strong regularity.
- 5:10 – 5:45 Charalambos Makridakis, FORTH and U. Crete
The role of continuum and discrete energies in machine learning algorithms

Friday July 19th

- 9:30 – 10:05 Manoussos Grillakis, Univ. of Maryland
On a model for relativistic strings
- 10:10 – 10:45 Angeliki Menegaki, Imperial College London
On linearisation around singular Rayleigh-Jeans for the 4-waves kinetic equation
- 10:50 – 11:20 Coffee Break
- 11:20 – 11:55 Katerina Nik, T.U. Delft
Surface morphoelasticity
- 12:00 – 12:35 Marios Stamatakis, Univ. of Ioannina
A generalization of Young measures for the Hydrodynamic limit of condensing Zero Range Processes
- 12.40– 1.15 Phoebus Rosakis, Univ. of Crete
Towards new field theories for fracture, plasticity and cancer growth, through nonconvex calculus of variations, bifurcation theory for PDE, and modelling in nonlinear elasticity.
- 1:20 – 2:40 **Lunch Break**
- 2:40 – 3:15 Andreas Vikelis, Univ. of Vienna
Measure-valued solutions for non-associative finite plasticity
- 3:20 – 3:55 Konstantinos Zemas, Univ. of Bonn
Stability aspects of the Möbius group of S_n-1
- 4:00 – 4:30 Coffee Break
- 4:30 – 5:05 Mihalis Dafermos, Princeton Univ. and Univ. of Cambridge
Extremal and near extremal black holes.
- 5:10 – 5:45 Panagiotis Souganidis, Univ. of Chicago
Control of the Dyson equation and large deviations for the eigenvalues of large symmetric matrices