Mathematical approaches to complex systems: Statistical mechanics and partial differential equations, 2 – 7 July, 2017

PROGRAM

Arrábida, July 2 – July 5, 2017

Sunday, July 2 – Arrival of the participants

17:15 - Departure of the bus from Lisbon airport to Arrábida. Gathering at the airport "Meeting Point".
20:00 – Dinner

Monday, July 3

10:00 - 11:00 –M. PULVIRENTI (Univ. of Rome la Sapienza, Italy) *From N-Body Schroedinger to Hartree: Uniformity in* $\hbar$
11:00 - 11:15 – Discussion
11:15 - 12:15 - A. J. SOARES (Univ. Minho, Portugal) *From the kinetic theory formulation of chemical processes to reaction-diffusion equations*
12:15 - 12:30 – Discussion

13:00 – Lunch

15:00 - 16:00 – J. L. VASQUEZ (Univ. Autonoma de Madrid, Spain) *Linear and nonlinear diffusion with nonlocal fractional operators*
16:00 - 16:15 – Discussion
16:15 - 17:15 – M. GONZALEZ NOGUERAS (Univ. Autonoma de Madrid, Spain) *Gluing methods for the fractional Yamabe problem with isolated singularities*
17:15 - 17:30 – Discussion
17:30 - 18:00 – Coffee break

18:00 - 19:00 – S. MERINO-ACEITUNO (Imperial College, UK) *A new flocking model through body attitude coordination*

19:00 - 19:15 – Discussion
20:00 - Dinner

Tuesday, July 4

10:00 - 11:00 – M. LOSS (Georgia Tech, USA) *Entropy decay for the Kac master equation*
11:00 - 11:15 – Discussion
11:15 - 12:15 – M. BONFORTE (Univ Autonoma de Madrid, Spain) *Nonlinear and Nonlocal Degenerate Diffusions on Bounded Domains*
12:15 - 12:30 - Discussion

13:00 - Lunch

15:00 - 16:00 – E. CARLEN (Rutgers University, USA) *Quantum Master Equations*
16:00 - 16:15 – Discussion
16:15 - 17:15 – M. J. OLIVEIRA (Univ. Aberta, Lisbon) *A new approach to the combinatorial harmonic analysis on configuration spaces*
17:15 - 17:30 – Discussion
17:30 - 18:00 – Coffee break
18:00 - 19:00 – X. ROS-OTON (Univ. of Texas at Austin, USA) *Free boundary regularity in the parabolic fractional obstacle problem*
19:00 - 19:15 – Discussion
20:00 – Dinner

Wednesday, July 5

10:00 - 11:00 – R. MARRA (Univ. of Rome Tor Vergata, Italy) *Stationary solutions to the Boltzmann equation and their hydrodynamic limit*
11:00 - 11:15 – Discussion
11:15 - 12:15 – R. ESPOSITO (M&MOCS - Universita' dell'Aquila) *Hydrodynamic Limit of a Kinetic Gas Flow Past an Obstacle*
12:15 - 12:30 - Discussion
13:00 - Lunch
15:00 - 16:00 – M. INFUSINO (Univ. Konstanz, Germany) *The infinite dimensional moment problem as a new approach to realizability*
16:00 - 16:15 – Discussion

16:15 - Closing
17:15 - Departure of the participants from Arrábida

LISBON, Faculdade de Ciências, C6.2.33, July 6 – 7, open to students and public in general

Thursday, July 6

10:00 - 11:00 - M. LOSS (Georgia Tech, USA) *The Kac master equation: Propagation of chaos, derivation of Boltzmann equation and approach to equilibrium*
11:00 - 11:30 - Discussion
11:30 - 12:30 - M. PULVIRENTI (Univ. of Rome la Sapienza, Italy**)** *The mechanism of chaos for classical particle systems: Propagation in time of statistical independence, scaling limits and kinetic equations (Vlasov, Boltzmann, Landau)*
14:30 - 15:30 - M. INFUSINO (Univ. Konstanz, Germany) *The realizability problem for point processes*

15:30 - 17:30 - Workshop discussions

Friday, July 7
10:00 - 11:00 - E. CARLEN (Rutgers University, USA) *Introduction to Operator inequalities, Non-commutative Probability and Quantum Statistical Mechanics*
11:30 - 12:30 - R. ESPOSITO (Univ. of Rome Tor Vergata, Italy) *Hydrodynamic limit of steady non equilibrium solutions to the Boltzmann equation*
14:30 - 17:30 - Workshop discussions