

KTE2018

Kinetic and Transport Equations: Mathematical Advances and Applications

Parma, 10-12 October 2018

Centro Sant'Elisabetta, Campus – UNIVERSITA' di PARMA

PROGRAM

Wednesday October 10th

14.00-14.30 *Registration*

14.30-14.50 *Opening (with Prof. Roberto De Renzi, Head of the Department of Mathematical, Physical and Computer Sciences, and Prof. Roberto Fornari, Vice Rector of Parma University)*

14.50-15.25 **A. Bobylev**, *On some properties of Vlasov-Poisson-Landau kinetic equations*

15.25-16.00 **F. Golse**, *Linear Boltzmann equation and fractional diffusion*

16.00-16.30 *Coffee Break*

16.30-17.05 **A. Frezzotti**, *Kinetic theory problems in two-phase flows*

17.05-17.30 **V.V. Aristov**, *Simulations of nonequilibrium flows of gas mixtures with chemical reactions in a problem with “membrane-like” boundary conditions*

17.30-17.55 **F. Davì**, *A reaction-diffusion-drift equation in the Continuum Physics of scintillating crystals*

Thursday October 11th

9.15-9.50 **L. Desvillettes**, *Multi species Boltzmann equations for reactive monoatomic and polyatomic gases: modeling and mathematical analysis*

9.50-10.25 **M. Sammartino**, *Oscillations in reaction-diffusion systems with linear and nonlinear cross-diffusion*

10.25-10.50 **C. Soresina**, *Cross-diffusion predator-prey models arising by time-scale arguments*

10.50-11.15 *Coffee Break*

11.15-11.50 **V. Romano**, *Mathematical issues in charge transport in graphene*

11.50-12.25 **A.K. Prinja**, *Recent developments in the application of the backward Master equation to stochastic particle populations*

12.25-12.50 **A. Tosin**, *Kinetic insights into the rise and fall of popularity on social media*

12.50-14.10 *Lunch*

14.10-14.45 **T. Ruggeri**, *Multiscale phenomena in Continuum Mechanics: mesoscopic justification of Rational Extended Thermodynamics of gases with internal structure*

14.45-15.20 **B. Ganapol**, *A mathematical realization of entropy through neutron slowing down*
15.20-15.45 **N. Bernhoff**, *Discrete velocity models for polyatomic molecules for multicomponent mixtures and shock profiles*

15.45-16.15 *Coffee Break*

16.15-16.50 **S. Succi**, *Kinetic modelling of soft flowing crystals* (conference call from Harvard)
16.50-17.25 **C. Negulescu**, *Some mathematical models and numerical simulations describing the decoherence phenomenon*
17.25-18.00 **K. Aoki**, *Shock wave structure for a polyatomic gas with large bulk viscosity*
18.00-18.15 **F. Schuerrer**, *Finding friends in scientific cooperation*

20.00 *Social Dinner – Restaurant “Corale Verdi” Vicolo Asdente 9 (Downtown Parma)*

Friday October 12th

9.15-9.50 **G. Toscani**, *Human behavior and lognormal distribution*
9.50-10.25 **A.J. Soares**, *On the Maxwell-Stefan diffusion limit for a mixture of reacting gases*
10.25-10.50 **S. Simic**, *Entropy growth within the shock wave in binary multi-temperature mixture*

10.50-11.15 *Coffee Break*

11.15-11.50 **G. Saccomandi**, *Heat Equation and Viscoelasticity*
11.50-12.25 **J. Banasiak**, *Asymptotic analysis of kinetic equations – a journey from transport theory through population dynamics to evolution on networks*
12.25-12.50 **S. Brull**, *A kinetic approach of the bitemperature Euler system*

12.50-14.10 *Lunch*

14.10-14.35 **T. Kessler**, *Vlasov-Poisson system tackled by particle simulation utilizing Boundary Element Methods*
14.35-15.00 **M. Zanella**, *Control strategies for road risk mitigation in kinetic and hydrodynamic traffic modelling*
15.00-15.25 **M. Conte**, *Glioma invasion and its interplay with the nervous tissue: a multiscale model*

15.25-15.50 *Coffee Break*

15.50-16.25 **C. Van der Mee**, *Exact solutions of integrable nonlinear evolution equations*
16.25-17.00 **J. Polewczak**, *Kinetic theories of inert and reactive mixtures*

17.00-17.30 *Round Table and closure*