

# Mathematical Methods and Modeling of Biophysical Phenomena

Hotel La Plage, Cabo Frio, Rio de Janeiro, from 03/03 to 03/09

## Program

Hour	Sunday 3	Monday 4	Tuesday 5	Wednesday 6	Thursday 7	Friday 8	Saturday 9
09:00 - 10:00		<b>J. Clairambault (INRIA, France)</b> Physiologically structured PDE models of proliferation in cell populations to optimise anticancer treatments	<b>U. Ascher (Vancouver, Canada)</b> Stochastic algorithms for inverse problems involving PDEs and many measurements.	<b>N. Vauchelet (Paris, France)</b> Bacteria motion by chemotaxis : kinetic and macroscopic limits.	<b>C. Mocenni (Siena, Italy)</b> Effect of rough boundaries and internal noise in reaction-diffusion equations.	<b>G. Sallet (Metz, France)</b> Stable introduction of Wolbachia infection into the mosquito <i>Aedes aegypti</i>	<b>Round Table</b>
10:00 - 11:00		<b>A. Marciniak (Heidelberg, Germany)</b> Structured population model of fitness selection during cell differentiation	<b>S. Siltanen (Helsinki, Finland)</b> Electrical impedance tomography using nonlinear Fourier transform	<b>G. Raoul (Cambridge, UK)</b> PDE methods to study evolution in spatially structured populations	<b>P. Degond (Toulouse, France)</b> Phase transition and hysteresis in alignment dynamics of self-propelled Particles	<b>M.Souza (UFF, Brazil)</b> Multiscale tales in epidemiology	<b>Round Table</b>
11:00 - 11:30		Break					
11:30 - 12:30		<b>S. Mirrahimi (Paris, France)</b> Spatial sorting and evolution in a structured population model	<b>C. Turner (Cordoba, Argentina)</b> Adjoint method for a tumour growth PDE-constrained optimization problem	Social Program	<b>D. Oelz (Vienna, Austria)</b> A viscous two-phase model for contractile actomyosin bundles	<b>N. Stollenwek (Lisboa, Portugal)</b> Modelling and model evaluation on empirical data in epidemiology: dynamic noise, chaos and predictability	
12:30 - 15:00		Lunch			Lunch		
15:00 - 16:00		<b>P. Amster (Buenos Aires, Argentina)</b> Existence of periodic solutions in some population dynamics models	<b>M.Thieullen (Paris, France)</b> On a family of models occuring in mathematical modelling for biology. Examples in neuroscience		<b>J. Mitchell (Wisconsin, USA)</b> Density-cluster NMA: A new protein decomposition technique for coarse-grained normal mode analysis	<b>N. Meunier (Paris, France)</b> Mathematical and numerical modeling of early atherosclerotic lesions	
16:00 - 16:30		Break			Break		
16:30 - 17:30	Registration	<b>M. R. D’Orsogna (Northridge, California)</b> Stochastic Nucleation in Biology	<b>E. Tanre (Inria, France)</b> Global solvability of a network of integrate-and-fire neurons of McKean-Vlasov type	<b>Contributed</b>	<b>S. Benzekry (Bordeaux, France)</b> Mathematical modeling of systemic inhibition of angiogenesis and tumor-tumor interactions in metastatic cancers		
17:30 - 19:30		<b>Poster</b>	<b>Poster</b>	<b>Poster</b>	<b>Jair Koiller (FGV-RJ, Brazil)</b> Reproduction in a Randomly Varying Environment: Lyapunov exponents		