



MOTIMO is an acronym for 'Seminal Motility Imaging and Modeling'.

Workshop "Collective dynamics of active particles, swimmers, motile cells"

Tuesday 22 September 2015-Wednesday 23 September 2015.

**Institut de Mécanique des Fluides de Toulouse (IMFT) - Amp
2 Allée du pr Camille Soula - 31400 Toulouse**

<http://perso.math.univ-toulouse.fr/motimo/final-workshop/>

Purpose of the workshop

The goal of the workshop is to provide an interdisciplinary forum gathering biologists, mathematicians and physicist working on the experimental observation and numerical modeling of suspensions of active swimmers.

The workshop will consist of 6 one-hour lectures by experts and 8 thirty-minutes more specialized presentations.

Tuesday 22 September 2015

- 10 h 00 - 11 h 00 Swimming dynamics of microswimmers in viscoelastic fluids near a wall
Arezoo Ardekani - Purdue University
- 11 h 30 - 12 h 30 Wave motion of semen as a predictor of fertility
Xavier Druart - Inra - Centre Val de Loire
- 14 h 00 - 15 h 00 Energetics of the sperm flagellum
David Smith - Université of Birmingham
- 15 h 00 - 15 h 30 Mechanoregulation of molecular motors in flagella
Hermes Gadelha - University of Oxford
- 16 h 00 - 17 h 00 Collective response and emergent structures in microswimmer suspensions
Ignacio Pagonabarraga - University of Barcelona
- 17 h 00 - 17 h 30 Sperm navigation along helical paths in 3D chemoattractant landscapes
Benjamin Friedrich - Max Planck Institute for the Physics of Complex Systems

Wednesday 23 September

- 9 h 00 - 10 h 00 Adventures in sperm motility analysis; making sense of a multidimensional problem
Bill Holt - Zoological Society of London
- 10 h 00 - 10 h 30 Collective motion of sperm cell in confined geometries
Olivier Praud - Institut de Mécanique des Fluides de Toulouse
- 11 h 00 - 12 h 00 Paco Blasco - Proiser
- 12 h 00 - 12 h 30 Floaters on Faraday waves: Clustering and heterogeneous flow
Ceyda Sanli - University of Namur
- 14 h 00 - 15 h 00 Cédric Richard - Université Nice Sophia Antipolis
- 15 h 00 - 15 h 30 On the Self-Organized Hydrodynamic models of collective behaviours and the stability analysis
Hui Yu - Institut de Mathématiques de Toulouse
- 15 h 30 - 16 h 00 Macroscopic models for collective sperm-cells dynamics and cells inclination
Laurent Navoret - Université de Strasbourg

