COMPLEX DAY
PROGRAM 2023

8:30 – 9:00   *Registration and Coffee*

9:00 – 9:15   *Jérémie Bec – Foreword on the Academy "Complex Systems"*

ORAL PRESENTATIONS I

~ 9:15: **Florence Marcotte**
(Inria/LJAD)
Minimal seeds for subcritical dynamos

~ 9:30: **Médéric Argentina**
(INPHYNI)
Strategies to produce highest underwater swimming

~ 9:45: **Jérémie Topin**
(ICN)
Numerical models decipher odorant binding and receptor activation at the molecular level

~ 10:00: **Mélina Cointe**
(INRAe)
Bridging behaviour and spatial propagation: a new double-spiral maze and image analysis pi peline to study dispersal in groups of minute insects

~ 10:15: **Francois-Xavier Gauci**
(INPHYNI)
Biomimetic leaves to study embolism spreading

10:30 -11:00   *Coffee Break*

ORAL PRESENTATIONS II

~ 11:00: **Simone Ebert**
(Inria)
Temporal pattern recognition in retinal ganglion cells is mediated by dynamical inhibitory synapses

~ 11:15: **Juliette Huynh**
(INPHYNI)
Critical velocity for superfluidity in reduced dimensions: From matter to light quantum fluids

~ 11:30: **Leonardo Ciambezi**
(GREDEG)
Rethinking inflation in an ABM model

~ 11:45: **Gianni Aupetit-Diallo**
(INPHYNI)
Correlations and symmetries of 1D spin mixtures

~ 12:00: **Paul Maurer**
(Inria)
Stochastic models with Lévy processes to describe the orientation of rods in turbulence

~ 12:15: **Mattis Reisner**
(INPHYNI)
Experimental observation of multifractality in Fibonacci chains

12:30 -14:00   *Lunch*

14:00 – 15:00   ## ORAL PRESENTATIONS III

~ 14:00: **Alesia Herasimenka**
(Inria/LJAD)
Controllability of satellites on periodic orbits with cone-constraints on the thrust direction

~ 14:15: **Fabiola Gerosa**
(LAGRANGE)
Clusters of heavy particles in 2D Keplerian turbulence

~14:30 **Luca Zanaglia**
(INPHYNI)
Wave turbulence in a multimode chaotic optical fibre

~14:45 **Sumithra Reddy Yerasi**
(LJAD)
Elastic turbulence in polymer solutions: modelling and simulation

15:00 – 15:15   *Short Break*

ORAL PRESENTATIONS IV

~ 15:15: **Vincent Calcagno**
(INRAe)
How pulsed migration patterns impact gene flow and the genetic divergence of populations

~ 15:30: **Lamberto Dell'Elce**
(Inria)
Considerations on two-phase averaging of time-optimal control systems

~ 15:45: **Tatiana Shmeleva**
(I3S)
Verification of square lattices with various neighborhoods by infinite Petri Nets

~ 16:00: **Jacques-Alexandre Sepulchre**
(INPHYNI)
A nested bistable module within a negative feedback loop ensures different types of oscillations in signaling systems

~ 16:15: **André Galligo**
(LJAD)
Asymptotic limit of interacting particle sets

15:15 – 16:30   ## ORAL PRESENTATIONS V

~ 17:00 **Romain Bachelard**
(INPHYNI/Federal University of São Carlos)
Enhanced quantum memories with cold atomic clouds

~ 17:15 **Christophe Henry**
(Inria)
Modeling of particle and flow dynamics in wall-bounded environments

~ 17:30 **Céline Cohen**
(INPHYNI)
Mechanical impact on a breath figure

17:45 -18:45   *Selection of the best presentations by students and Aperitif*