

Solvay Workshop in the honor of Prof. Pierre Gaspard

9-11 December 2024, ULB - Campus Plaine - Building NO - 5th Floor - Solvay Room

MONDAY 9 DECEMBER

09:30 - 10:00 Registration
10:00 - 10:15 Opening and welcome speech

SESSION 1: Experiments

10:15 - 11:00 **Shoichi Toyabe:** *Information and energy flow in biological molecular motor*
11:00 - 11:45 **Sergio Ciliberto:** *First passage time distribution as a fuel in an information engine*
11:45 - 12:30 **Felix Ritort:** *Variance sum rule for negentropy*
12:30 - 14:00 LUNCH BREAK at the canteen ("Forum" building)

SESSION 2: Complex Systems and the living world

14:00 - 14:45 **Alain Destexhe:** *Linking molecular mechanisms to the emergence of large-scale activity in the brain*
14:45 - 15:30 **Astero Provata:** *Bump states and chimera states in integrate-and-fire networks: the role of synaptic plasticity*
15:30 - 15:45 COFFEE BREAK
15:45 - 16:30 **David Lacoste:** *Emergence of life in compartmentalized molecular systems*
16:30 - 17:15 **Luca Peliti:** *Information flow in a model of immune-pathogen coevolution*

TUESDAY 10 DECEMBER

SESSION 3: Complex quantum systems

09:00 - 09:45 **Tomaž Prosen:** *On Ruelle-Pollicot resonances of Quantum Many-Body dynamics*
09:45 - 10:30 **Felipe Barra:** *Thermodynamic-like properties of an open quantum system evolving by scattering events*
10:30 - 10:45 COFFEE BREAK
10:45 - 11:30 **Jorge Kurchan:** *The "full" Eigenstate Thermalization Hypothesis and Free Probability*
11:30 - 12:15 **Daniel Alonso:** *Exploring Work Distributions from Single Energy Measurements in Simple Systems*

12:15 - 12:25 GROUP PHOTO
12:25 - 13:45 LUNCH BREAK at the canteen ("Forum" building)

SESSION 4: Thermodynamics

13:45 - 14:30 **Massimiliano Esposito:** *Complex systems: A thermodynamic perspective*

14:30 - 15:15 **Thomas Speck:** *Stochastic and effective thermodynamics of active Brownian particles*

15:15 - 15:30 COFFEE BREAK

15:30 - 16:15 **Christian Maes:** *Birds can fly!*

16:15 - 17:00 **Udo Seifert:** *Model-free inference of entropy production: The thermodynamic uncertainty relation and beyond*

17:00 - 17:45 **David Andrieux:** *Beyond the Fluctuation Theorem*

19:30 BANQUET (Les Petits Oignons, 25 rue de la Régence. Registration is mandatory)

WEDNESDAY 11 DECEMBER

SESSION 5: Chemistry

10:00 - 10:45 **Norbert Kruse:** *Rate and selectivity oscillations in heterogeneous catalysis: from nanosized model catalysts to ensemble averaged systems*

10:45 - 11:30 **Raymond Kapral :** *Micromotors: how they self-organize in complex chemical media, and can acquire a hint of intelligence*

11:30 - 12:15 **Jean-Sabin McEwen:** *Atomistic Modeling of Catalytic Processes for Energy Applications*

12:15 - 13:45 FAREWELL LUNCH - at the canteen ("Forum" building)