

School**November 14 - 18, 2022****of the Thematic Programme on****“Mathematical Methods for the Study of Self-organization in the Biological Sciences”****November 14 - December 9, 2022, organized by****Pierre Degond (IMT), Marie Doumic (Sorbonne U, Paris), Anna Kicheva (ISTA, Klosterneuburg), Sara Merino-Aceituno (U Vienna), Christian Schmeiser (U Vienna)****• Monday, November 14th, 2022**09:00 – 09:30 **Registration & Welcome**09:30 – 10:30 **Francis Filbet (U Paul Sabatier, Toulouse)***About kinetic theory for the study of self-organization in the biological science*10:30 – 10:45 **Break**10:45 – 11:45 **Amandine Véber (U Paris Cité)***Stochastic models of evolution in a population living in a continuum*11:45 – 12:15 **Coffee Break**12:15 – 13:15 **Luigi Preziosi (Politecnico di Torino)***Modelling Cell Motility and the Physical Limits of Migration*13:15 – 15:00 **Lunch Break**15:00 – 15:45 **Luigi Preziosi (Politecnico di Torino)***Modelling Cell Motility and the Physical Limits of Migration*15:45 – 16:00 **Break**16:00 – 16:45 **Luigi Preziosi (Politecnico di Torino)***Modelling Cell Motility and the Physical Limits of Migration*16:45 – 19:00 **Reception and Poster Session****• Tuesday, November 15th, 2022**09:00 – 10:00 **Dr. Amandine Véber (U Paris Cité)***Stochastic models of evolution in a population living in a continuum*10:00 – 10:15 **Break**10:15 – 11:00 **Sascha Martens***Mechanisms of Cargo Selection and Autophagosome Biogenesis in Selective Autophagy*11:00 – 11:30 **Coffee break**11:30 – 13:00 **Luigi Preziosi***Modelling Cell Motility and the Physical Limits of Migration*13:00 – 14:45 **Lunch break**

14:45 – 15:30 **Kees Weijer (U Dundee)**

Analysis and perturbation of cell behaviours controlling gastrulation in the chick embryo

15:30 – 15:45 **Break**

15:45 – 16:45 **Amic Frouvelle (CEREMADE, Paris)**

Alignment of self-propelled particles: from microscopic to hydrodynamic models

• **Wednesday, November 16th, 2022**

09:00 – 10:30 **Prof. Francis Filbet (U Paul Sabatier, Toulouse)**

About kinetic theory for the study of self-organization in the biological science

10:30 – 11:00 **Coffee break**

11:00 – 11:45 **Maria Romanova-Michaelides (U Genève)**

Mechanism of Morphogen Gradient Scaling

11:45 – 12:00 **Break**

12:00 – 12:45 **Rubén Pérez-Carrasco (Imperial College, London)**

Effects of cell cycle variability on stochastic gene expression in a population of cells

18:30 – **School dinner**

• **Thursday, November 17th, 2022**

09:00 – 10:00 **Dr. Amandine Véber (U Paris Cité)**

Stochastic models of evolution in a population living in a continuum

10:00 – 10:15 **Break**

10:15 – 11:00 **Diana Pinheiro (Vienna Biocenter)**

Morphogen gradient orchestrates pattern-preserving tissue morphogenesis via motility-driven unjamming

11:00 – 11:30 **Coffee break**

11:30 – 13:00 **Prof. Francis Filbet (U Paul Sabatier, Toulouse)**

About kinetic theory for the study of self-organization in the biological science

13:00 – 14:45 **Lunch break**

14:45 – 15:30 **Timothy Saunders (U Warwick)**

Cell shape changes during tissue morphogenesis

15:30 – 15:45 **Break**

15:45 – 16:45 **Amic Frouvelle (CEREMADE, Paris)**

Alignment of self-propelled particles: from microscopic to hydrodynamic models

• **Friday, November 18th, 2022**

09:00 – 10:00 **Amic Frouvelle (CEREMADE, Paris)**

Alignment of self-propelled particles: from microscopic to hydrodynamic models

10:00 – 10:15 **Break**

10:15 – 11:15 **Dr. Amandine Véber (U Paris Cité)**

Stochastic models of evolution in a population living in a continuum

11:15 – 11:45 **Coffee break**

11:45 – 12:45 **Amic Frouvelle (CEREMADE, Paris)**

Alignment of self-propelled particles : from microscopic to hydrodynamic models.

All talks take place at ESI Boltzmann Lecture Hall! Wearing an FFP2 mask is mandatory!