

Lecture Titles

■ Hugues Chaté, and Julien Tailleur, with the help of Alexandre Solon and Aurelio Patelli

“Active matter: from interacting self-propelled particles to hydrodynamics”

Lecture 1: Introduction + Statistical physics of active particles I - from effective equilibrium to ratchets

Lectures 2&3: Statistical physics of active particles II - Mechanical Pressure of Active Particles + Statistical physics of active particles III - Motility-Induced Phase Separation

Lecture 4: Aligning self-propelled particles: Active Ising model and Vicsek-style models

Lecture 5: Continuous theories for Vicsek-style models

■ Vincent Hakim:

12 (Thur.) : Collective cell motion

13 (Fri.) : Tissue dynamics

■ Hisao Hayakawa:

1 Non-equilibrium statistical mechanics of sheared dense granular flow: fluctuation theorem and mode-coupling theory for nonlinear rheology

2. Fluctuating motion of a tracer under the influence of dry friction and/or non-Gaussian noise

■ Jean-François Joanny:

“Active gels, cytoskeleton, and tissue”

■ Masaki Sano

“Introductory talk: diversity and universality in active matter”

■ Shin-ichi Sasa:

“Collective dynamics from non-equilibrium identities”

■ Motomu Tanaka:

“Life as Open Non-Equilibrium Systems (1, 2)”

■ Hirofumi Wada:

“Mechanics of an elastic ribbon: theory and experiment”

■ Hajime Yoshino:

“Statistical mechanics of glasses: replica approaches to handle metastable states”