

LMU-UT Joint Workshop on Statistical and Biological Physics

October 29(Mon.), 30(Tue.), 2018

October 29, Monday (Room 287, Faculty of Science Building 1 (East), Hongo campus)

- 9:30 - 10:10 Erwin Frey (LMU), Emergence and Self-Organisation in Biological Systems
- 10:10- 10:50 Shuji Ishihara (UBI, Komaba), From cells to tissue: a continuum model for passive and active tissue deformation
- 10:50-11:30 Fridtjof Brauns (LMU), Phase space geometry of reaction–diffusion systems
- 11:30-12:10 Taihei Fujimori (UBI, Komaba), Tissue self-organization based on collective cell migration in Dictyostelium development
- 12:10-13:40 Lunch
- 13:40-14:20 Nen Saito (UBI, Hongo), Self-organization via membrane deformation and reaction diffusion: 3D modeling for macropinocytosis of ameboid cell
- 14:20-15:00 Felix Kempf (LMU), Active Matter Invasion into Capillaries
- 15:00-15:40 Tetsuya Hiraiwa (UBI, Hongo), Theory on dynamics and stress generation in an actomyosin cytoskeleton
- 15:40-16:10 Coffee Break
- 16:10-16:50 Manon Wigbers (LMU), A Cascade of Protein Patterns Senses Cell Shape in Starfish Oocyte during Meiosis
- 16:50-17:30 Tomohiro Shima (Riken, UBI), Kinesin-binding–triggered conformation switching of microtubules contributes to polarized transport
- 18:00- Welcome Party (Room 287)

October 30, Tuesday (Room 287, Faculty of Science Building 1 (East), Hongo campus)

- 9:00 - 9:40 Philipp Geiger (LMU), Topologically robust zero-sum games
- 9:40- 10:20 Yuma Fujimoto (UBI, Komaba), Evolution of Intention through mutual recognition in Game Theory
- 10:20-10:40 Coffee Break
- 10:40-11:20 David Muramatsu (LMU), Range Expansions in a Stochastic Metapopulation Model
- 11:20-12:00 Tetsuhiro Hatakeyama (UBI, Komaba), Reciprocity between Robustness and Plasticity as a Universal Law in Biology

12:00-13:30 Lunch

13:30-14:10 **Yongtae Hwang (Physics, Hongo), Collective behaviors of cardiac myosin molecules for effective cardiac function**

14:10-14:50 **Sakurako Tanida (Physics, Hongo), Self-organizations of microtubule filaments gliding on kinesin motors**

14:50-15:20 Coffee Break

15:20-16:00 **Patrick Wilke (LMU), Two-Species Active Transport along Cylindrical Biofilaments is Limited by Emergent Topological Hindrance**

16:00-16:40 **Renan A. L. Almeida (Physics, Hongo), Coarsening & percolation in twisted nematic liquid crystals**

16:40-17:20 **Kazumasa Takeuchi (Physics, Hongo), Turbulent liquid crystal and competing bacteria: possible universal relaxation at criticality**

October 31, Lab. visit to Komaba Campus (Kaneko, Sawai, Ishihara, Wakamoto group)

November 1, Seminar or Free Discussion at Hongo