

Program

- Sunday 28th of January 2018

17:00-19:00 Wine and Cheese reception, Aspen Center for Physics – Smart Hall Lobby

- Monday 29th of January 2018

08:30-08:45 Welcoming words by the organizers.

08:45-09:20 D. Bartolo, *Sound waves and spontaneous oscillations in polar active matter*

09:20-09:55 R. Di Leonardo, *Light controllable active matter*

09:55-10:10 Welcoming words by the ACP staff

Coffee Break

10:30-10:55 S. Thutupalli, *Flow-induced phase separation: Boundaries determine the collective dynamics*

10:55-11:30 P. Fischer, *Synthetic Nanomotors*

Lunch Break

14:30-16:00 Focused Discussion: *Synthetic Active Matter* (J. Palacci & S. Sanchez)

16:30-17:05 A. Solon, *Phase Equilibria in Motility-Induced Phase Separation*

17:05-17:40 M. Bowick, *Flocking round and round*

Coffee Break

18:00-18:35 J. Ross, *Microtubule Self-Organization Only Needs a Little Crosslinking*

18:35-19:10 O. Hallatschek, *Microbes Under Pressure*

19:10-19:35 D. Klotsa, *A touch of non-linearity: active matter in fluids at intermediate Reynolds*

20:00-22:00 Poster Session, Beer & Pizza, Smart Hall

- Tuesday 30th of January 2018

08:30-09:05 J. Brady, *The force on a boundary and the EOS for active matter*

09:05-09:40 S. Granick, *Catalytic Enzymes as Active Matter*

Coffee Break

10:00-10:10 Announcement of the best poster prizes

10:10-10:35 C. Douarche, *Sedimentation and gravitational instability of Escherichia coli suspension*

10:35-11:10 C. Broedersz, *Broken detailed balance in active biological systems*

Lunch Break

14:30-16:00 Focused Discussion: *Cytoskeletal Dynamics and Active Mechanics* (N. Fakhri & D. Needleman)

16:30-17:05 J. Gore, *Collective behavior in laboratory populations*

17:05-17:40 D. Astumian, *Molecular Adaptation by Stochastic Pumping*

Coffee Break

18:00-18:35 H. Hess, *Engineering with kinesin motors*

18:35-19:10 I. Aronson, *Spontaneous topological charging of tactoids in a living nematic*

19:10-19:35 E. Kanso, *Active chains in microfluidic channels*

- Wednesday 31st of January 2018

08:30-09:05 K. S. Korolev, *Effects of Cellular Chirality on Competition and Cooperation in Microbial Colonies*

09:05-09:40 W. Poon, *Pattern formation using light-actived bacterial swimmers*

Coffee Break

10:00-10:25 Y. Fily, *Persistent limit of an active particle in a nonconvex potential*

10:25-11:00 C. Cottin-Bizonne, *Suspensions of Active Particles*

11:00-11:25 L. Enkeleida, *Self-organization of micro-swimmers in confined spaces*

11:25-11:50 M. Betterton, *Active matter with intent: clog control in excavating collectives*

Lunch Break

16:30-17:30 Physics Cafes: J. Ross & S. Sanchez, Wheeler Opera House

17:30-18:30 Public Lecture: C. Marchetti, Wheeler Opera House

- Thursday 1st of February 2018

08:30-09:05 A. Bausch, *Pattern Formation in Active Cytoskeletal Systems*

09:05-09:40 Y. Kafri, *Long-range forces between bodies in active matter*

Coffee Break

10:00-10:25 K. Nagai, *Experimental investigations of collective motion of self-propelled particles*

10:25-11:00 N. Ouellette, *Toward a "Thermodynamics" of Collective Behavior*

Lunch Break

14:30-16:00 Focused Discussion: *Topological Active Matter* (W. Irvine & V. Vitelli)

16:30-17:05 D. Saintillan, *Active hydrodynamics of interphase chromatin: coarse-grained modeling*

17:05-17:40 R. Kapral, *Reversible reaction dynamics of self-diffusiophoretic Janus motors*

Coffee Break

18:00-18:35 H. Chaté, *Quasi-long-range polar order and KT-like transition in dry active matter*

18:35-19:35 Selected Poster Presentations

20:00-22:00 Conference Dinner, Location: Meadows, Doerr-Hosier Center

- Friday 2nd of January 2018

08:30-09:05 M. Shelley, *Active Mechanics in the Cell*

09:05-09:40 M. C. Marchetti, *Rigidity and flocking transitions in dense tissues*

Coffee Break

10:00-10:25 P. Underhill, *Using a stochastic field theory to understand active colloidal suspensions*

Lunch Break

16:30-17:05 M. Sano, *Topological Defects Control Collective Dynamics of Active Matter*

17:05-17:40 M. Murrell, *Filament Bending Promotes Dynamic Stability in Soft Active Nematics*

Coffee Break

18:00-18:35 A. Ghosh, *All Magnetic Active Matter*

18:35-19:10 S. Fraden, *The Role of Boundaries in 2D Active Nematics*

19:10-19:35 E. Fodor, *Microscopic efficiency sets the kinetics and structure of active fluids*

Poster list

1. Wylie Ahmed, *Soft, Living, and Active Matter Laboratory*
2. Joseph Albert, *Reynolds vs. Peclet - Finite acceleration in the Stokes regime from slowly relaxing gradients*
3. Laura Alvarez, *Programmable assembly of hybrid colloidal microswimmers*
4. Antoine Aubret, *Dynamical Self-Assembly of Self-Spinning Microgears*
5. Yongjoo Baek, *Negative mobility of passive bodies in active fluids*
6. Oliver Baeumchen, *Light-Switchable Adhesion, Biofilm Formation and Collective Effects of Microalgal Suspensions*
7. Peter Foster, *A Hierarchy of Instabilities in an Active Material*
8. Yohsuke Fukai, *Large-scale flow in electroconvection of cholesteric liquid crystal*
9. Tetsuya Hiraiwa, *Theory on chemotactic migration of eukaryotic cells*
10. Theresa Jakuszeit, *Dynamics of chemotactic and chemokinetic bacterial populations*
11. Ah-Young Jee, *Enzymes and other proteins using super-resolution fluctuation microscopy*
12. Jaideep Katuri, *Artificial micro-swimmers respond to external cues*
13. Airi N. Kato, *Reciprocating motion and the net locomotion of the Quincke rollers under AC fields*
14. Sofia Magkiriadou, *A colloidal spinner fluid*
15. Christopher Miles, *Unstable self-stretching and invasion of active matter in a viscous fluid*
16. Janna Nawroth, *The Hawaiian bobtail squid: A model system for flow functions of ciliated surfaces*
17. Hyuk Kyu Pak, *An information-driven Brownian motor achieved experimentally by asymmetric cooling*
18. Praneet Prakash, *Dynamics of payload carrying bacteria*
19. Geet Raju, *Active sedimentation equilibrium of Quincke rollers*
20. Jeroen Rodenburg, *Van't Hoff's law for active suspensions: the role of the solvent chemical potential*
21. Suraj Shankar, *Irreversibility in an active gas*
22. Sakurako Tanida, *The effects of volume exclusion on collective motion of microtubules*
23. Erik Verriest, *Graceful Gait Transitions via Homotopy of Periodic Behaviors*
24. Hiroki Yamaguchi, *Breakdown of tissue homeostasis and stochastic Fisher waves*
25. Ryoichi Yamamoto, *Particle-based model for crawling and proliferating cells with contact inhibitions*

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