Cologne Evolution Colloquium

Oskar Hallatschek

University of California, Berkeley

Jam and Conquer

Microbes often colonize spatially-constrained habitats, such as pores in the skin or crypts in the colon. The resulting micro-communities can be very stable and contribute to the long-term function of our microbiomes. Due to a lack of dynamical observations, it is however unclear how these communities and their ecological functions arise. By monitoring and modeling microbial populations in microfluidic channels of systematically varied size, we find a rich spectrum of scale-dependent dynamical patterns that are controlled by the competition between density-dependent outflow and population growth. These results elucidate how the injection of degrees of freedom, driven by cell proliferation, can drive a non-equilibrium phase transition (different from MIPS) and suggest that the mechanics jammed cellular packings can influence the evolutionary dynamics of dense microbial populations.

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Hosted by Tobias Bollenbach

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