



Active matter in complex environments

Prof. Dr. Hartmut Löwen

*Chair of Theoretical Physics
Institute for Theoretical Physics II: Soft Matter
Heinrich Heine University Düsseldorf, Germany*



Ordinary materials are "passive" in the sense that their constituents are typically made by inert particles which are subjected to thermal fluctuations, internal interactions and external fields but do not move on their own. Living systems, like schools of fish, swarms of birds, pedestrians and swimming microbes are called "active matter" since they are composed of self-propelled particles. Active matter is intrinsically in nonequilibrium and exhibits a plethora of novel phenomena as revealed by a recent combined effort of statistical theory, computer simulation and real-space experiments.

After an introduction on biological and artificial self-propelled particles, the talk will focus on modelling of active Brownian particles. Several phenomena in complex environments are then discussed ranging from an active Mpemba effect and spreading of active polymers in porous media to breathing particles and entropions in active crystals.

Wednesday, Nov 29th, 2023 at 2:15 pm

MPI-DS, Prandtl Lecture Hall
Am Fassberg 11, Göttingen, and
Zoom Meeting ID: 959 2774 3389
Passcode: 651129, [direct link](#)



Max Planck Institute for Dynamics and Self-Organization
Living Matter Physics

Dr. Abdallah Daddi-Moussa-Ider & Dr. Benoît Mahault

Email: golestania-office@ds.mpg.de
Am Faßberg 17, 37077 Göttingen, Germany