

Eugene Wigner Colloquium

joint event of GRK 1558 and SFB 910



Prof. Axel Voigt

Technische Universität Dresden

“Microscopic field theoretical approaches for active systems”

We consider two microscopic modeling approaches for active systems. The first is a microscopic phase field approach, which describes each particle using a hydrodynamic active polar gel theory. Within this approach we analyze the form of the particle, its induced flow field, which is compared with classical squirmer models, and the interaction with other particles which leads e.g. to persistent translational collective motion. The second approach can be considered as a coarse-grained description. The model combines the phase-field-crystal model with a Toner-Tu like approach and allows to deal with larger system sizes. After validating the approach on basic properties for binary collisions, collective migration and vortex formation, we identify giant number fluctuations in a cluster formation process and extend the model to binary systems of active and passive particles.

Thursday, 07.06.18 · 16:15h · EW 202

Technische Universität Berlin · Institut für Theoretische Physik · Hardenbergstraße 36 · 10623 Berlin
www.itp.tu-berlin.de/grk1558 · www.itp.tu-berlin.de/sfb910

The logo for GRK 1558 is a blue rounded square with the text "GRK1558" in large white letters and "research training group" in smaller white letters below it.

GRK1558
research training group