

Seminar of SFB 910



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University of Cambridge

“Dissolving active particles, and hydrodynamic essentials of flagellar bundling”

In the first part of this talk I will present some recent work on the dynamics of a dissolving active particle. We derive two theoretical models for the dissolution of such a particle and calculate the effect on its diffusivity and trajectories. We find numerous scaling laws that relate our findings to experimentally accessible parameters.

In the second part I will talk about some recent work on identifying the essential physical mechanism of bacterial flagellar bundling. We categorise bundling mechanisms into active, ie. due to direct interactions between the filaments, and passive, ie. due to locomotion of the cell body, and compare their relative importance at different stages of the bundling process. We find that passive effects dominate except in the very late stages of bundling.

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