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Title: Hydrodynamic simulations of soft matter systems in external fields

Abstract:

Soft matter systems like colloids, polymers, or red blood cells exist normally in solution where hydrodynamic interactions are important. The simulation of such systems requires then special techniques that are able to simultaneously take into account the different length and time scales involved in the dynamics of the system. In this talk, I will briefly introduce one of this methods known as multiparticle collision dynamics (MPC) and further discuss two applications of the method in the presence of external fields: star polymers in shear flow and colloids in a temperature gradient.

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