
On the well-posedness theory for a spatially inhomogeneous nonlinear Fokker-Planck equation

Francesca ANCESCHI

Università degli Studi di Napoli "Federico II", Italy

We investigate the Cauchy problem and the diffusion asymptotics for a spatially inhomogeneous kinetic model associated to a nonlinear Fokker-Planck operator. Its solution describes the density evolution of interacting particles whose mobility is hampered by their aggregation. When the initial data lies below a Maxwellian, we derive the global well-posedness with instantaneous smoothness. Moreover, the scaled equation leads to the fast diffusion flow under the low field limit.