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Absorption in the Vlasov-Navier-Stokes system with gravity

jeudi 18 novembre 2021 10:45 (30 minutes)

In this talk, we will introduce the Vlasov-Navier-Stokes system, which is a fluid-kinetic model describing a cloud of particles sedimenting in a fluid. We will present some recent developments about the large time behaviour of global weak solutions to this system, when one considers the absorption of the particles at the physical boundary. We will explain how the combined effect of the absorption and the gravity leads to decay in time estimates for the solutions to the system. This result is based on [1], in the continuation of [2].

[1] L. Ertzbischoff. Decay and absorption for the Vlasov-Navier-Stokes system with gravity in a half-space. arXiv preprint arXiv :2107.02200, 2021.
[2] L. Ertzbischoff, D. Han-Kwan, and A. Moussa. Concentration versus absorption for the Vlasov-Navier-Stokes system on bounded domains. Nonlinearity, 34(10) :6843, 2021.

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