NUMERICAL ANALYSIS OF THE VLASOV-POISSON-FOKKER-PLANCK SYSTEM

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In this talk, we focus on the simulation and the numerical analysis of the Vlasov-Poisson-Fokker-Planck system. We propose a Hermite - discontinuous Galerkin scheme which preserves the physical invariants of the continuous model, and we prove the exponential relaxation of the discrete solutions to equilibrium, uniformly with respect to the discretization parameters. We then verify the high order accuracy and the long time behavior of the method thanks to various numerical simulations.