THE HOMOGENEOUS LANDAU EQUATION IN THE COULOMB CASE WITH AN INFINITE ENTROPY DISSIPATION RATE

SONA AKOPIAN

In 1998 it was shown by Villani that weak solutions to the spatially homogeneous Landau and Boltzmann equations that model rarefied gases with very strong (Coulomb) repulsive intermolecular forces can exist under the a priori assumption that the rate of entropy decay (a.k.a. entropy dissipation rate) is finite for all time $t \geq 0$. Since then, all existence, regularity, long time behavior results about the Landau and Boltzmann equations in this case have assumed finite rate of entropy decay. However, it is easy to show that if solutions are in L^p, then the entropy assumption is not needed. In this talk we will discuss the well posed-ness theory in L^p of the Landau equation and a special type of Boltzmann equation, with large initial data in L^p.