

Scattering Effect of the Boltzmann Transport Equation in All Space: Dispersion vs. Dissipation

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We discuss the existence and long time behavior of solutions of the Boltzmann Transport Equation in the vicinity of a global Maxwellian initial data. We show the existence of a scattering regime that leads to the construction of eternal solutions (at plus/minus infinity) that do not coincide with a global Maxwellian. This long time behavior arises due to the spacial boundary conditions at infinity, exhibiting that dispersion takes over the collisional dissipation by increasing the rarefied effect.

This is work in collaboration with C. Bardos, F. Golse and C.D. Levermore.