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*Construction of weak solutions for the Landau equation by approximations of solutions to the Boltzmann equation in a grazing collision limit.*

**Abstract**

We study the Cauchy problem for Lp solutions to the homogeneous elastic Boltzmann equations with a transition probability rate given by an scaled angle-potential concentrated singular mass with a one parameter family that produces concentration in the small parameter limit, so called grazing collision limit. Such solutions exits, are unique and are show to converge to solutions of the Landau equation for Coulomb interactions in the sense of distributions. This result works for intramolecular potentials that range from Coulomb to moderately soft ones. These Landau solutions conserve mass, momentum and energy, as well as they have bounded entropy if initially so.

This is work in collaboration with Sona Akopian.