

Speaker: Cyril Imbert, ENS Paris.

Title: Global regularity estimates for the Boltzmann equation without cutoff.

Abstract: In this talk, we review recent results about new global regularity estimates for the Boltzmann equation without cutoff under the condition that some hydrodynamic quantities are under control. A solution of the Boltzmann equation describes the dynamics of a rarefied gas at a scale that stands between the microscopic (atoms) and macroscopic (fluids) ones. A quantity associated with a solution is called hydrodynamic if it is relevant at the macroscopic scale. The estimates we will review tell us that any possible singularity of a solution is macroscopically observable.