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Seminar

Solution to the Boltzmann Equation without Angular Cutoff in a Critical Chemin-Lerner Space

Dr. Shota Sakamoto
Kyoto University

Abstract: We consider the Boltzmann equation without angular cutoff near the equilibrium. In this decade, many methods which enable us to extensively analyse the non-cutoff Boltzmann equation have been developed, and among the results, a solution to the equation in a Sobolev space was established. Our aim in this talk is to improve this result from a viewpoint of differentiability of initial datum. For this aim, a Besov space is now known as a strong tool to achieve this, not only for a Cauchy problem of the Boltzmann equation, but also for those of many other PDEs. We construct a solution in a certain time-space-velocity Besov space, which is called a Chemin-Lerner space, and can be thought “critical” for our problem in a sense of inclusion of solution spaces. Proof is based on local existence and continuation argument by a priori estimates, and the latter one will be focused on so that we can see what properties of the Besov space effectively work. This work is based on a joint work with Professor Yoshinori Morimoto at Kyoto University.

Date: 28 August 2017 (Monday)
Venue: Rm 222, Lady Shaw Building,
The Chinese University of Hong Kong, Shatin
Time: 10:30 a.m. – 11:30 a.m.

All are Welcome!