



Reading Seminar on Deng-Hani-Ma's Work on Boltzmann-Grad Limit

Beijing International Center for Mathematical Research
(BICMR)

Overview

This Reading Seminar will focus on the groundbreaking work of Deng, Hani, and Ma regarding the long-time derivation of the Boltzmann equation in the Boltzmann-Grad limit. The seminar is designed to provide a comprehensive exploration of the mathematical techniques and proofs developed by Deng, Hani, and Ma. Participants will benefit from detailed explanations and guided readings, gradually building expertise in this challenging and significant area of kinetic theory.

Homepage at BICMR.

Eighth Meeting Information

Morning Session: 2-hour talk by Yu Deng

Time: 10:00 - 12:00 (GMT+08:00), August 22, 2025

Format: On-site talk

Location: Room 77201, Jingchunyuan 78, BICMR, Peking University

Talk title: Long time derivation of Boltzmann's equation

Talk abstract: We review recent work (joint with Zaher Hani and Xiao Ma) that justifies the Boltzmann equation from hard sphere dynamics, for the full lifespan of its solution. The proof consists of two parts: a cumulant expansion formula in terms of molecules, and the analysis of molecules via carefully designed cutting algorithm. We will briefly discuss each part, and get to more details if time permits.

Afternoon Session:

Speaker: Yulong Wu (Wuhan University)

Time: 14:00 - 15:00 (GMT+08:00), August 22, 2025

Format: Hybrid (offline and online)

Location: Room 78201, Jingchunyuan 78, BICMR, Peking University

Join: <https://meeting.tencent.com/dm/gPy6yTpIMKQE>

Meeting ID: 568-432-267