

Quantitative homogenization and hydrodynamic limit of non-gradient Kawasaki dynamics

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This talk presents a quantitative homogenization for a non-gradient Kawasaki dynamic. The main strategy roots from the quantitative homogenization theory developed by Armstrong, Kuusi, Mourrat and Smart, and was already implemented in the previous work by Giunti-Gu-Mourrat' 22 in an interacting particle system without exclusion. The new challenges here come from the hardcore constrain of particle numbers and the curse of dimension, and I will explain how to overcome them by a new coarse-grained coupling. As an application, our result can be integrated into the classical work Funaki-Uchiyama-Yau' 96 and yield a quantitative hydrodynamic limit. This talk is based on a joint work with Tadahisa Funaki (BIMSA) and Han Wang (Qiuqin College, Tsinghua University).

报告人简介：顾陈琳现为清华大学丘成桐数学科学中心助理教授，他本科毕业于复旦大学，博士毕业于巴黎高等师范学院，师从 Jean-Christophe Mourrat。他主要从事概率论和偏微分方程研究，重点关注定量均匀化理论、随机环境下的随机游动、粒子系统等方面，相关工作曾获得 ICCM 博士论文金奖。