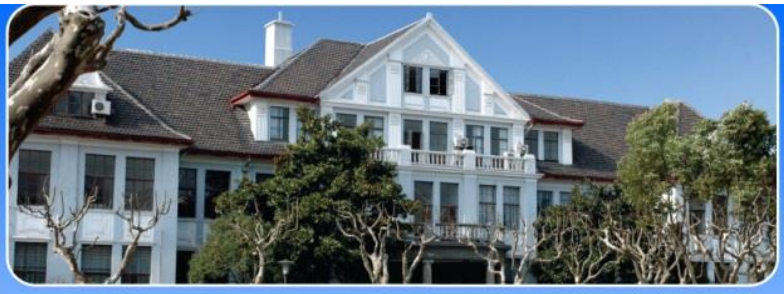


复旦大学数学科学学院
数学综合报告会

报告题目：Low-Rank Methods for Multitype Interacting Particle Systems

报告人：郎泉钧 (Duke University)

时间：2025-12-26 星期五 11:15-11:45

地点：腾讯会议ID：339 476 861；密码：251226

报告摘要：

We introduce a multi-type interacting particle system on graphs to model heterogeneous agent-based dynamics. Within this framework, we develop algorithms that jointly learn the interaction kernels, the latent type assignments, and the underlying graph structure. The approach has two stages: (i) a low-rank matrix sensing step that recovers a shared interaction embedding, and (ii) a clustering step that identifies the discrete types. Under the assumption of the restricted isometry property (RIP), we obtain theoretical guarantees on sample complexity and convergence for a wide range of model parameters.

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