

# 随机数学研究中心学术报告

题目：Branching process based on modeling and inference for propagation dynamics

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摘要：Faced with the uncertainty, heterogeneity, and dynamics in complex system, new research view and ideas are in great need for propagation processes. Branching processes are applied for modeling population evolution in probability, which coincide with the diffusion of spreading processes. Branching models are classic and concise, which process solid methods and rich theoretical results. However, the application of branching model for propagation dynamics is far from sufficiency. This talk proposes to establish a simple and flexible spreading model based on branching processes from the perspective of probability and statistics. The influence of key factors such as randomness, heterogeneity and dynamics on spreading dynamics in complex systems are given via branching processes in random environment, age-dependent branching processes, and multi-type branching processes, etc. Moreover, based on various branching models, epidemic tracing inference and transmission chain reconstruction inference will be established from partial observed data.

欢迎参加!

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