

# 概率论系列报告

报告题目 (Title): Percolation phase transition of dynamical random graphs

报告人 (Speaker): 王轩 博士

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时间 (Time): 4月28日(周一)下午 3:00-4:00

地点 (Venue): 北京大学理科一号楼 1479

摘要 (Abstract): In this talk we study phase transitions for a class of dynamical random graph processes that evolve via the addition of new edges in a manner that incorporates both randomness as well as limited choice. As the density of edges increases the graphs display a phase transition from the subcritical regime, where all components are small, to the supercritical regime, where a “giant” component emerges. We are interested in the behavior at criticality. One of the standard models of this kind are the so-called bounded-size-rule processes. Here at each step, one chooses two edges uniformly at random and then decides which one to add to the existing configuration according to some criterion under which all components of size greater than some threshold  $K$  are treated equally. In order to describe the joint evolution of component sizes and surplus, we introduce and study the augmented multiplicative coalescent. Our main result shows that, for all bounded-size-rule processes, the vector of suitably scaled component sizes and surplus converges in distribution to the augmented multiplicative coalescent. This is joint work with Shankar Bhamidi and Amarjit Budhiraja.

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