

# 概率论系列报告

报告题目 (Title) : Coexistence of Grass, Saplings and Trees in  
the Staver-Levin Forest Model

报告人 (Speaker) : 张原 Duke University

时间 (Time) : 5月5日(周一)下午 4:00-5:00

地点 (Venue) : 北京大学理科一号楼 1479

摘要 (Abstract) : In this talk we prove the existence of a nontrivial stationary distribution for a forest model with Grass, Saplings and Trees, by comparing with the two type contact process model of Krone and considering the long range limit. Our proof shows that if a particle systems has states  $(0; 1; 2)$  and is attractive, then coexistence occurs in the long-range model whenever the absorbing state  $(0,0)$  is an unstable fixed point of the mean-field ODE for  $(u_1; u_2)$ . The result we obtain in this way is asymptotically sharp for Krone's model. In the Staver-Levin forest model, if  $(0; 0)$  is attracting there may also be another stable fixed point for the ODE. We show that, as in the case of the quadratic contact process, in some of these cases there may be a nontrivial stationary distribution.

欢迎参加