

STANFORD PROBABILITY SEMINAR

Paul Jung, Cornell

Monday, 30 January 2006

4:15pm (Refreshments at 4pm in the 1st Floor Lounge)

Sequoia Hall, Room 200

The Lower Phase Transition of the Contact Process

Abstract. (Joint with M Aizenman.) Consider the contact process on any transitive graph with bounded degree starting from one particle. Using a variational derivative form of Russo's formula, we show that the expected number of particles of the process decays exponentially in time for all infection rates λ that are below the lower critical value λ_s . Along the way we obtain certain critical exponent bounds. Some of these results have previously been proven on \mathbb{Z}^d in a well-known paper of Bezuidenhout and Grimmett.