



The University of Chicago
Department of Statistics

PhD Dissertation Proposal Presentation

WINFRIED BARTA

Department of Statistics
The University of Chicago

Some Aspects of Markov Chain Monte Carlo

TUESDAY, November 17, 2009, at 2:00 PM
110 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

Evolving Sets (Morris & Peres, 2005) have been used as a tool for theoretical analysis of finite state Markov chains. More recently, they were also used in an algorithm for local graph partitioning (Andersen & Peres, 2009). We discuss a possible generalization of their results to turn this algorithm into a new convergence diagnostic for finite state Markov chains.

We also discuss analyzing the mixing time of certain standard MCMC schemes for some random probability measures on finite state spaces. In particular, the technique of canonical paths to bound the spectral gap of a chain is reviewed and extensions to choosing such paths at random are discussed.