

STANFORD PROBABILITY SEMINAR

Sharad Goel, Stanford

Monday, 31 October 2005

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

Sequoia Hall, Room 200

Estimating mixing times via the spectral profile

Abstract. Given 52 playing cards, how many shuffles does it take to approximately randomize the deck? More generally, how long does it take a finite Markov chain to get close to its stationary distribution? In this talk, I'll introduce the spectral profile as a tool for proving upper and lower bounds on convergence rates. This approach extends the commonly used spectral gap method, and allows us to recover and refine previous conductance-based estimates of mixing time. I will illustrate how the spectral profile technique is applied in several models, including groups with moderate growth, the fractal-like Viscek graphs, and the torus. This work is joint with Ravi Montenegro and Prasad Tetali.