Analysis of Markov chain Monte Carlo method with heavy-tailed target distributions

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In this talk, we will discuss Markov chain Monte Carlo (MCMC) methods with heavy-tailed invariant probability distributions. When the invariant distribution is heavy-tailed the algorithm has difficulty reaching the tail area. We will study the effect by using the high-dimension scaling limit. We also study ergodic properties of some MCMC methods with heavy-tailed invariant distributions.