

A Dirichlet Form approach to MCMC Optimal Scaling

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Abstract: In this talk I will discuss the use of Dirichlet forms to deliver proofs of optimal scaling results for Markov chain Monte Carlo algorithms (specifically, Metropolis-Hastings random walk samplers) under regularity conditions which are substantially weaker than those required by the original approach (based on the use of infinitesimal generators). The Dirichlet form method has the added advantage of providing an explicit construction of the underlying infinite-dimensional context. In particular, this enables us directly to establish weak convergence to the relevant infinite-dimensional diffusion.

(Joint with Giacomo Zanella and Mylene Bdard.)

Reference:

Zanella, G., Bdard, M., Kendall, W. S. (2017). A Dirichlet Form approach to MCMC Optimal Scaling. *Stochastic Processes and Their Applications*, Volume 127, Issue 12, 4053 – 4082.

See also arXiv, 1606.01528, 22pp. URL: arxiv.org/abs/1606.01528.