Seminar

UNBIASED MARKOV CHAIN MONTE CARLO WITH COUPLINGS

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Abstract: [www.stat.unipd.it/fare-ricerca/seminari](http://www.stat.unipd.it/fare-ricerca/seminari)
Unbiased Markov Chain Monte Carlo with Couplings

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Markov chain Monte Carlo methods provide consistent approximations of integrals as the number of iterations goes to infinity, with many applications in statistics such as Bayesian inference.

However, these estimators are generally biased after any fixed number of iterations, which complicates parallel computation as well as other tasks. In this talk, I will explain how to remove this burn-in bias by using couplings of Markov chains and a telescopic sum argument due to Glynn & Rhee (2014). The resulting unbiased estimators can be computed independently in parallel, and various methodological developments follow.

I will discuss the benefits and limitations of the proposed framework in various settings, both in discrete and continuous state spaces.

This is joint work with John O'Leary and Yves F. Atchade available at arxiv.org/abs/1708.03625.