Colloquium Series
Department of Mathematics and Statistics

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Partial Overlapping Batch Means Estimators

Abstract: My research proposes a family of partial-overlapping batch means estimators, which are computationally efficient and can be conveniently applied in practice. The family is indexed by a shift parameter, which determines the overlap between batches and is a generalization of non-overlapping batch means and overlapping batch means. The focus is on random vector processes appearing in Markov chain Monte Carlo and steady state simulations. Specifically, estimation is of the asymptotic covariance matrix in the central limit theorem, where conditions ensuring strong consistency are provided. Finite sample performance is evaluated through various simulations, where the new estimators show a significant reduction in variability compared to non-overlapping batch means estimators and a significant reduction in compute time compared to overlapping batch means estimators.

Monday, Feb. 17, 1:05 – 1:50 pm in 1-109