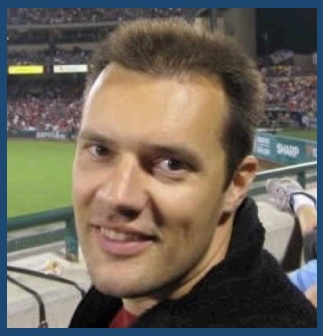
Department of Applied and Computational Mathematics and Statistics Colloquium



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A practical sequential stopping rule for high-dimensional MCMC

A current challenge for many Bayesian analyses is determining when to terminate high-dimensional Markov chain Monte Carlo simulations. To this end, we propose using an automated sequential stopping procedure that terminates the simulation when the computational uncertainty is small relative to the posterior uncertainty. Further, we show this stopping rule is equivalent to stopping when the effective sample size is sufficiently large. Such a stopping rule has previously been shown to work well in settings with posteriors of moderate dimension. In this talk, we illustrate its utility in high-dimensional simulations while overcoming some current computational issues. As an example, we consider a Bayesian dynamic space-time model on weather station data. Our results show the sequential stopping rule is easy to implement, provides uncertainty estimates, and performs well in high-dimensional settings.

Tuesday, December 15, 2015
4:00 PM – 5:00 PM
127 Hayes-Healy Center

Colloquium Tea 3:30 PM to 4:00 PM 154 Hurley Hall