Discussion on **Regenerative Simulation in MCMC**, Galin Jones et all

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The authors have shown that Regeneration Simulation (RS) can provide a nice approach for estimating expectations and quantiles, and provide CLTs for convergence.

The idea of RS is older than AMCMC, but not too many studies on RS appear. The presentation points out the problem:

❑ The minorization condition ($P(x, A) \geq s(x)Q(A)$) is difficult in practice, especially in high(er) dimensions.

and provides a natural remedy:

❑ Construct RS componentwise MCMC in 1D, with 1D minorizations in such a way that the (full-space) minorization condition is satisfied.

Questions and comments, in light of the examples:

❑ Adaptive componentwise RS: if every (componentwise) proposal accepted, check regeneration, and adapt each 1D proposal distribution if regeneration OK. But how would this work for higher dimension, where *all* proposals are unlikely to be accepted?

❑ Adaptation: done here with empirical means (for CWIS) and variances for the 1D proposals. Roughly the same can be done with a variant of basic adaptive MwG (SCAM), comparisons?

❑ In the examples, is it necessary to use chains of length $10^5 - -10^6$ for rather low dimensional problem? An inherent feature of RS, or just for test purposes?

❑ Comparisons of RS with full-dimensional random Metropolis to basic adaptive Metropolis?