AFFINE INVARIANT ENSEMBLE SAMPLING: BAYESIAN PARAMETER ESTIMATION FOR A BIOLOGICAL OSCILLATOR

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ABSTRACT

MCMC methods allow one to estimate averages against probability densities that are not analytically tractable. We use a method by Goodman and Weare whose performance is invariant with respect to affine transformations to obtain Bayesian estimates for the parameters of two existing models of an important biological oscillator. We find that only one of the models is able to explain the oscillator's robust period with respect to varying input.