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A new tool for nonparametric estimation of species variety with Gibbs-type priors

Bayesian nonparametric inference for species sampling problems concerns with the estimation, conditional on an initial observed sample, of the species variety featured by an additional unobserved sample. Within the framework of Gibbs-type priors, we introduce a new tool for estimating species variety when the additional sample is required to be very large and the implementation of exact Bayesian nonparametric procedures is prevented by cumbersome computation. Our result is illustrated through a simulation study and the analysis of a real dataset in linguistics.