



Approximate Bayesian inference for the Rosenblatt distribution

Laura Rifo*

Unicamp, Campinas, Brazil - lramos@ime.unicamp.br

Plínio Andrade

Usp, São Paulo, Brazil - plinio@ime.usp.br

The Rosenblatt distribution is a one-parameter family arising from a non-central limit theorem for long-range dependent random variables. The usual parametrization includes the normal distribution, the standardized chi-squared distribution and weighted sums of chi-squared variates. Although its density has not a manageable analytical form, its moments, cumulants and distribution function have been recently numerically obtained. We apply a Bayesian likelihood-free methodology to make inferences for that family, comparing the performance of diverse statistics derived from the empirical distribution. The estimates obtained by our methodology are remarkably precise.

Keywords: approximate Bayesian computation; Hellinger distance.