



THE UNIVERSITY OF CHICAGO

Departments of Computer Science, Mathematics, Statistics and the Computation Institute
SCIENTIFIC AND STATISTICAL COMPUTING SEMINAR

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Full Likelihood Inference for Max-Stable Data

THURSDAY, November 3, 2016 at 4:00 PM
226 Jones Laboratory, 5747 S. Ellis Avenue
Host: Michael Stein

ABSTRACT

We show how to perform full likelihood inference for max-stable multivariate distributions or processes based on a stochastic Expectation-Maximisation algorithm. In contrast to current approaches, such as pairwise likelihoods or the Stephenson–Tawn likelihood, our method combines statistical and computational efficiency in high-dimensions, and it is not subject to bias entailed by lack of convergence of the underlying partition. The good performance of this methodology is demonstrated by simulation based on the logistic model, and it is shown to provide dramatic computational time improvements with respect to a direct computation of the likelihood. Strategies to further reduce the computational burden are also discussed. This is a joint work with Clément Dombry, Marc G. Genton and Mathieu Ribatet.

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