

Testing for Multivariate Regular Variation

Andrea Krajina*

University of Goettingen, Germany Andrea.Krajina@mathematik.uni-goettingen.de

John H.J. Einmahl,

Tilburg University, The Netherlands J.H.J.Einmahl@uvt.nl

Multivariate regularly varying probability distributions, independently or as special cases of the distributions in a max-domain of attraction of a multivariate extreme value distribution, are often used in the extreme value theory and adjacent fields. We introduce a localized empirical likelihood based test for multivariate regular variation and study its asymptotic properties. We also illustrate the finite-sample performance of the test on simulated and real data examples.

Key Words: multivariate extreme value theory, empirical likelihood, asymptotic distribution