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Robust estimation of the conditional stable tail dependence function

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Abstract

We propose a robust estimator of the stable tail dependence function in the case where random covariates are recorded. Under suitable assumptions, we derive the finite-dimensional weak convergence of the estimator properly normalized. The performance of our estimator in terms of efficiency and robustness is illustrated through a simulation study. Our methodology is applied on a real dataset of sale prices of residential properties.

Keywords Empirical processes · Local estimation · Multivariate extreme value statistics · Robustness · Stable tail dependence function

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