

Robust conditional Weibull-type estimation

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Abstract We study nonparametric robust tail coefficient estimation when the variable of interest, assumed to be of Weibull type, is observed simultaneously with a random covariate. In particular, we introduce a robust estimator for the tail coefficient, using the idea of the density power divergence, based on the relative excesses above a high threshold. The main asymptotic properties of our estimator are established under very general assumptions. The finite sample performance of the proposed procedure is evaluated by a small simulation experiment.

Keywords Weibull-type distribution · Tail coefficient · Density power divergence · Local estimation