Robust Weighted Likelihood Estimators with an Application to Bivariate Extreme Value Problems

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Robust estimation of parametric models is possible through the use of weighted maximum likelihood techniques. A new estimator is proposed and its good properties illustrated through examples. Ease of implementation is an attractive property of the new estimator and motivated its development. The new estimator downweights with respect to the model and can be used for complicated likelihoods such as those involved in bivariate extreme value problems. New weight functions, tailored for these problems, are constructed. The increased insight provided by our robust fits to these bivariate extreme value models is exhibited through the analysis of sea-levels at two East Coast sites in the United Kingdom. Reference for the work is Dupuis and Morgenthaler (2002).

References

D.J. Dupuis and S. Morgenthaler (2002). Robust weighted likelihood estimators with an application to bivariate extreme value problems. *Canadian Journal of Statistics*, to appear.