

Cantoni, Eva; Ronchetti, Elvezio

Robust inference for generalized linear models. (English) Zbl 1072.62610
J. Am. Stat. Assoc. 96, No. 455, 1022-1030 (2001).

Summary: By starting from a natural class of robust estimators for generalized linear models based on the notion of quasi-likelihood, we define robust deviances that can be used for stepwise model selection as in the classical framework. We derive the asymptotic distribution of tests based on robust deviances, and we investigate the stability of their asymptotic level under contamination. The binomial and Poisson models are treated in detail. Two applications to real data and a sensitivity analysis show that the inference obtained by means of the new techniques is more reliable than that obtained by classical estimation and testing procedures.

MSC:

62J12 Generalized linear models (logistic models)
62F35 Robustness and adaptive procedures (parametric inference)
62E20 Asymptotic distribution theory in statistics

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