School of Economics and Social Sciences

A modified-likelihood-type shrinkage estimator for the sparse-response Poisson and Binomial glm

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ABSTRACT

We propose the shrinkage estimation based on modified likelihood, and put forward the algorithm especially for the binomial and poisson generalized linear models. Our simulation studies suggest that this method enjoys some of the favorable properties such as decreasing the mean square error and increasing the stability of the estimation. The application of this shrinkage estimator is illustrated by using several real data sets and all of the performance showing that shrinkage estimation is a valuable tool when dealing with sparse response.

KEYWORDS: shrinkage estimation, generalized linear models, sparse response

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