

Robust RMSq criterion of Variables Selection

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Abstract

The paper present a robust version of RMSq for regression variables selection. It's defined by $R_{RMSq} = R_{RSSq}/(n - q)$, where $R_{RSSq} = \sum p(rq)$ is a robust residual sum from a roubst fit of selected model. When $p(x) = x^2/2$, R_{RSSq} becomes the residual sum of squares(RSSq) of a least squares fit. Because RSSq is easily affected by abnormal cases, when the presence of outliers and possible departures from the normality assumption on the error distribution,the performance of RMSq criterion for variables selection becomes very worse, and need used robust version. Simulation result show that the R_{RMSq} method is valuable.

Keywords: Outlier; Variables selection; R_{RMSq} criterion