

Robust GM-Estimator for Linear Model in the Presence of High Leverage Collinearity Influential Observations

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Abstract. The ridge regression estimator is widely used method to remedy the problem of multicollinearity in multiple linear regression model. However, the ridge estimate is inefficient when multicollinearity is caused by high leverage collinearity influential observations. In this article, we propose a new robust Generalized-M estimator to rectify this problem. A simulation study and numerical examples are given to show the performance of our proposed method. Our results indicate that the new method outperformed other well-known methods.

Keywords: High Leverage Points, Multicollinearity, High Leverage Collinearity Influential Observations.