

Performances of the positive-rule Stein-type r-k class estimator in linear regression

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Abstract

In this paper, the Stein-type r-k class estimator and positive-rule Stein-type r-k class estimator are introduced for the parameter vector in a linear regression model when it is suspected that the parameter vector may be restricted to a linear manifold. Bias and quadratic risks of the proposed estimators are derived and some sufficient conditions on the ridge parameter k and the departure parameter Δ are derived for the superiority of the positive-rule Stein-type r-k class estimator over the r-k class estimator by Baye and Parker (1984), the restricted r-k class estimator by Xu and Yang (2010) and the Stein-type r-k class estimator, respectively.

Keywords

Uncertain prior information, r-k class estimator, Restricted r-k class estimator, Positive-rule Stein-type r-k class estimator, Quadratic risk.

References

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