

The Safety Belt estimation method

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Abstract

The main goal of this talk is to determine maximum likelihood estimators in the classical multivariate linear model as well as the growth curve model, assuming known prior information introduced via inequality restrictions on the parameters of the model. The restrictions are in the form of quadratic inequalities. Methods from convex optimization theory play a fundamental role in determining the estimators. A characteristic of the new estimators, called Safety Belt estimators, is that depending on the observed data, there are two alternative solutions to the likelihood equations. The result are illustrated using real-world data examples. Some similarities of Safety Belt estimation method with Ridge penalization of estimators under univariate models are also presented.

Keywords

Safety Belt estimation, Maximum likelihood estimation, inequality constraints, Ridge regression, MANOVA, Growth curve model.

References

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