

Baksalary, Jerzy K.; Puntanen, Simo; Styan, George P. H.

A property of the dispersion matrix of the best linear unbiased estimator in the general Gauss-Markov model. (English) Zbl 0727.62072

Sankhyā, Ser. A 52, No. 3, 279-296 (1990).

Summary: Solutions are derived to some versions of the problem of when the dispersion matrix of the best linear unbiased estimator of the expectation vector in the general Gauss-Markov model can be expressed in a form characteristic for the usual least-squares theory. A common denominator for all those versions is a certain property of the canonical correlations between the vector of the ordinary least-squares fitted values and the vector of the residuals. Among preliminaries, a brief survey of various representations of the dispersion matrix of the best linear unbiased estimator is given, as well as some auxiliary algebraic results that seem to be of interest also independently of the statistical context.

MSC:

[62J05](#) Linear regression; mixed models

[15A24](#) Matrix equations and identities

Cited in **18** Documents

Keywords:

unified theory of least squares; ordinary least-squares estimator; generalized inverse; orthogonal projector; dispersion matrix; best linear unbiased estimator of the expectation vector; general Gauss-Markov model; canonical correlations; residuals