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Linear model with variances depending on the mean value. (English) Zbl 0764.62055
Math. Slovaca 42, No. 2, 223-238 (1992).

Let $(Y, X\beta, \Sigma)$ be a linear regression model. The result of the observations is a realization of a random vector $Y_{n,1}$, whose mean value is $E_{\beta}Y = X\beta$, $X_{n,k}$ is a known design matrix, $\beta_{k,1} \in R^k$ the vector of unknown parameters, the covariance matrix of the vector Y depends on β ,

$$\Sigma = \sigma^2 \Sigma(\beta) = \text{diag}(\sigma^2(a + b|e'_i X \beta|^2))_{1 \leq i \leq n},$$

where σ^2 , a and b are known positive constants, and e'_i is the transpose of the i th unity vector.

The β_0 -locally best linear unbiased estimator of a linear function of the parameter β is obtained.

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MSC:

62J05 Linear regression; mixed models
62H12 Estimation in multivariate analysis

Cited in **5** Documents

Keywords:

uniformly best linear unbiased estimators; locally best linear unbiased estimator

Full Text: [EuDML](#)

References:

- [1] KUBÁČEK L.: Foundations of Estimation Theory. Elsevier, Amsterdam-Oxford-NewYork-Tokyo, 1988. · [Zbl 0698.62004](#)
- [2] RAO C. R., MITRA S. K: Generalized Inverse of Matrices and its Applications. J.Wiley, New York, 1971. · [Zbl 0236.15005](#)

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