

Katulska, Krystyna**On the estimation of total weight in singular spring balance weighing designs under the covariance matrix of errors σ^2G .** (English) [Zbl 0707.62163](#)

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Summary: The problem of the estimation of the linear combination of weights, $c'w$, in a singular spring balance weighing design when the error structure takes the form $E(ee') = \sigma^2G$ has been studied. A lower bound for the variance of the estimated linear combination of weights is obtained and a necessary and sufficient condition for this lower bound to be attained is given. The general results are applied to the case of the total of the weights. For a specified form for G , some optimum spring balance weighing designs for the estimated total weight are found.

MSC:[62K10](#) Statistical block designs[62J05](#) Linear regression; mixed modelsCited in **2** Documents**Keywords:**

block design; optimum singular spring balance weighing design

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