# Estimation in singular chemical balance weighing design with correlated errors

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#### Abstract

The problem of estimation of the total weight of objects in a chemical balance weighing design when the errors have the same variances and are negative correlated has been studied. A lower bound for the variance of the estimated total weight is obtained and a necessary and sufficient condition for this lower bound to be attained is given. Some designs for which the lower bound is attained are constructed.

## Keywords

Chemical balance weighing design, Incomplete block design, Total weight.

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1

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2