

Equality of BLUEs and/or BLUPs under two linear models using stochastic restrictions

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Abstract

We consider mixed linear models by supplementing a particular fixed effects model with appropriate stochastic restrictions. We show that all representations of the best linear unbiased estimator (BLUE) and best linear unbiased predictor (BLUP) can be obtained through the augmented model including stochastic restrictions. Using this approach, we consider two mixed linear models, M_1 and M_2 , say, which have different covariance matrices. We give necessary and sufficient conditions that the BLUP and/or BLUE under the the model M_1 continue to be BLUP and/or BLUE also under the model M_2 .

Keywords

BLUE, BLUP, Generalized inverse, Linear fixed effects model, Linear mixed effects model, Stochastic restrictions.