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## ON OPTIMALITY OF THE ORTHOGONAL BLOCK DESIGN

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### Abstract

In the paper a usual block design with treatment effects fixed and block effects random is considered. To compare experimental design the asymptotic covariance matrix of a robust estimator proposed by Bednarski and Zontek (1996) for simultaneous estimation of shift and scale parameters is used. Asymptotically  $A$ - and  $D$ - optimal block designs in the class of designs with bounded block sizes are characterized.

**Keywords:** Experimental design, orthogonal block design, robust estimator, maximum likelihood estimator,  $A$ -optimality,  $D$ -optimality.

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