

ON THE E - AND MV -OPTIMALITY OF BLOCK DESIGNS HAVING $k \geq v$

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Abstract. In this paper we consider the problem of determining and constructing E - and MV -optimal block designs to use in experimental settings where v treatments are applied to experimental units occurring in b blocks of size k , $k \geq v$. It is shown that some of the well-known methods for constructing E - and MV -optimal unequally replicated designs having $v \geq k$ fail to yield optimal designs in the case where $v < k$. Some sufficient conditions are derived for the E - and MV -optimality of block designs having $v < k$ and methods for constructing designs satisfying these sufficient conditions are given.

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