SOME NOTES ON BIB DESIGNS WITH REPEATED BLOCKS AND DIFFERENT CARDINALITIES

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Balanced Incomplete Block Designs (BIBD) are widely used in many fields of research, particularly in cases where it is desirable to have all the contrasts between treatments to be confounded with blocks to the same extent. The statistical optimality of BIB Designs is unaffected by the presence of repeated blocks, and it seems obvious that the selection of more copies of a least expensive block may significantly reduce the implementation cost, without loss of information. Many authors pay special attention to the construction and to the particular properties of BIB Designs with repeated blocks (BIBDR), not only because it might be less expensive and easier to implement, but also because they are optimal according to the minimum variance of elementary contrasts between blocks. The set of distinct blocks in a BIB Design is known as the design support and the number of elements in it is the design cardinality. We present some notes on BIBDR block effects and some examples for the particular cases with nine treatments and plots size three, with different cardinalities.