PROBABILITY
AND
MATHEMATICAL STATISTICS
Vol. 9, Fasc. 2 (1988), pp. 45–50

A KRONECKER-PRODUCT DESIGN AND ITS REDUCIBLE ASSOCIATE CLASSES

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Abstract: Using incidence matrices N_i of balanced incomplete block (BIB) designs and their complementary incidence matrices N_i^* for i=1,2, a partially balanced incomplete block (PBIB) design in the form $N_1 \otimes N_2 + N_1^* \otimes N_2 + N_1 \otimes N_2^*$ is dealt with. Necessary and sufficient conditions for this rectangular PBIB design to be reducible to 2-associate PBIB designs are discussed. It is also shown that this type of designs is not reducible to any group divisible PBIB design.

2000 AMS Mathematics Subject Classification: Primary: -; Secondary: -; **Key words and phrases:** -

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