

PAIRWISE-BALANCED, VARIANCE-BALANCED AND RESISTANT INCOMPLETE BLOCK DESIGNS REVISITED*

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Abstract. A general solution is derived to the problem of characterizing block designs that are simultaneously pairwise-balanced and variance-balanced. Applications of the characterizations obtained to some problems concerned with the local resistance of BIB designs are presented.

Key words and phrases: Block design, pairwise balance, variance balance, resistance, BIB design.