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Extremal problems for pairwise balanced designs. (In English)

Combinatorics, graph theory and computing, Proc. 16th Southeast. Conf., Boca Raton/Fla. 1985, Congr. Numerantium 48, 55-66 (1985).

[For the entire collection see Zbl 619.00006.]

The authors consider designs whose blocks do not necessarily have constant size. They give bounds relating designs and certain invariants of the designs. For example, they show the number of distinct multisets which can occur as degree sequences for designs is between $\exp(c_1 n)$ and $\exp(c_2 n)$ where n is the number of points in the design and c_1 and c_2 are constants. They also give the best possible upper bound on the number of distinct block sizes and upper bounds which in some cases are best possible on the sum of the sizes of the largest k blocks on a design on n points.

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Classification:
05B05 Block designs (combinatorics)

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pairwise balanced designs; PBD; degree sequences; block sizes