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Conference matrices with maximum excess and two-intersection sets. (English)

Summary: A two-intersection set with parameters \((j; \alpha, \beta)\) for a block design is a \(j\)-subset of the point set of the design, which intersects every block in \(\alpha\) or \(\beta\) points. In this paper, we show the existence of a two-intersection set with parameters \((2m^2 - m + 1; m^2m, m^2)\) for the block design obtained from translations of the set of nonzero squares in the finite field of order \(q = 4m^2 + 1\). As an application, we give a construction of conference matrices with maximum excess based on the two-intersection sets.

MSC:
05B05 Combinatorial aspects of block designs

Full Text: arXiv Link

References:

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