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On weighted minihypers in finite projective spaces of square order. (English) Zbl 1321.51012

Summary: In [L. Storme, Discrete Math. 308, No. 2–3, 339–354 (2008; Zbl 1131.51006)], weighted \{δ(q + 1), δ; k−1, q\}-minihypers, q square, were characterized as a sum of lines and Baer subgeometries \(PG(3, \sqrt{q})\) provided δ is sufficiently small. We extend this result to a new characterization result on weighted \{δv_{µ+1}, δv_µ; k−1, q\}-minihypers. We prove that such minihypers are sums of \(µ\)-dimensional subspaces
and of (projected) \((2µ + 1)\)-dimensional Baer subgeometries.

MSC:
51E21 Blocking sets, ovals, k-arcs
51E20 Combinatorial structures in finite projective spaces
05B25 Combinatorial aspects of finite geometries

Keywords:
minihypers; Griesmer bound; Baer subgeometries; blocking sets

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References:

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