

Incidence profiles of partial geometric designs with small block size

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Partial geometric designs (PGDS), or $1\frac{1}{2}$ -designs, with block size two and three have been completely classified. So have $1\frac{1}{2}$ -designs that have incidence profile $[\lambda, 1, 1]$ for λ a positive integer. In this talk, I will define an incidence profile of a $1\frac{1}{2}$ -design. I will also give examples of new incidence profiles of $1\frac{1}{2}$ -designs with small block size. Finally, I will pose some questions to be considered, a few being: Which incidence profiles of $1\frac{1}{2}$ -designs with block size four can be attained? Can we classify all $1\frac{1}{2}$ -designs with block size four (or any, based on their incidence profile)?

Keywords: partial geometric design ($1\frac{1}{2}$ -design), incidence profile