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Geometric realisation of the graphs of McKay-Miller-Širáň. (English) Zbl 1043.05060

J. Comb. Theory, Ser. B 90, No. 2, 223-232 (2004).

This paper provides an alternative construction of three families of graphs of diameter 2 and order $2q^2$, where q is a prime power. Some of the largest known graphs of diameter 2 come from these families which have originally been constructed by McKay, Miller and Širáň. In this paper the graphs are described as modified incidence graphs of an affine plane. This description allows the complete determination of the automorphism groups of the graphs.

Reviewer: Ulrike Baumann (Dresden)

MSC:

05C25 Graphs and abstract algebra (groups, rings, fields, etc.)

Cited in **6** Documents

05C62 Graph representations (geometric and intersection representations, etc.)

Keywords:

McKay-Miller-Širáň graphs; Hoffman-Singleton graph; biaffine plane; graph automorphism; diameter; automorphism group; geometric realisation

Software:

Magma; nauty

Full Text: [DOI](#)

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