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Strongly regular graphs with parameters $(81, 30, 9, 12)$ and a new partial geometry. (English) 


Summary: Twelve new strongly regular graphs with parameters $(81, 30, 9, 12)$ are found as graphs invariant under certain subgroups of the automorphism groups of the two previously known graphs that arise from 2-weight codes. One of these new graphs is geometric and yields a partial geometry with parameters $pg(5, 5, 2)$ that is not isomorphic to the partial geometry discovered by J. H. van Lint and A. Schrijver [13] in 1981.

MSC:

05E30 Association schemes, strongly regular graphs
51E14 Finite partial geometries (general), nets, partial spreads
05E18 Group actions on combinatorial structures

Keywords: strongly regular graph; partial geometry; automorphism group

Full Text: DOI

References:

· Zbl 0964.68595

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