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DISTANCE-REGULAR LOCALLY $pG_{s-6}(s, t)$ -GRAPHS OF DIAMETER GREATER THAN 3

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J. Koolen suggested the problem of studying distance-regular graphs in which neighborhoods of vertices are strongly regular graphs with the second eigenvalue at most t for some natural t . The solution of Koolen's problem consists of two steps: the first step is the enumeration of admissible intersection arrays of such graphs, and the second step is finding the automorphisms of the graphs with these arrays. At present, the first step is complete for $t = 5$ (A. Makhnev, D. Paduchikh, and A. Gutnova; A. Makhnev). The second step is complete for $t = 3$ (A. Makhnev and M. Shermetova). The program of studying distance-regular graphs in which neighborhoods of vertices are strongly regular graphs with the second eigenvalue r such that $5 < r \leq 6$ consists of three parts: the theorem of reduction to exceptional local subgraphs, the enumeration of intersection arrays of distance-regular locally exceptional pseudogeometric graphs, and the enumeration of intersection arrays of distance-regular locally exceptional nonpseudogeometric graphs. In this paper we enumerate intersection arrays of distance-regular locally pseudogeometric graphs for $pG_{s-6}(s, t)$ with diameter greater than 3.

Keywords: distance-regular graph, local subgraph, eigenvalue of a graph.

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