ON AUTOMORPHISMS OF A DISTANCE-REGULAR GRAPH WITH INTERSECTION ARRAY $\{69, 56, 10; 1, 14, 60\}$

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Let Γ be a distance-regular graph of diameter 3 with eigenvalues $\theta_0 > \theta_1 > \theta_2 > \theta_3$. If $\theta_2 = -1$, then the graph Γ_3 is strongly regular and the complementary graph $\bar{\Gamma}_3$ is pseudogeometric for $pG_{c_3}(k, b_1/c_2)$. If Γ_3 does not contain triangles and the number of its vertices v is less than 800, then Γ has intersection array $\{69, 56, 10; 1, 14, 60\}$. In this case Γ_3 is a graph with parameters (392,46,0,6) and $\bar{\Gamma}_2$ is a strongly regular graph with parameters (392,115,18,40). Note that the neighborhood of any vertex in a graph with parameters $(392, 115, 18, 40)$ is a strongly regular graph with parameters $(115, 18, 1, 3)$, and its existence is unknown. In this paper, we find possible automorphisms of this strongly regular graph and automorphisms of a distance-regular graph with intersection array $\{69, 56, 10; 1, 14, 60\}$. In particular, it is proved that the latter graph is not arc-transitive.

Keywords: distance-regular graph, automorphism of a graph.

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