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AUTOMORPHISMS OF A DISTANCE-REGULAR GRAPH WITH INTERSECTION ARRAY $\{75, 64, 18, 1; 1, 6, 64, 75\}$

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A distance-regular graph Γ with intersection array $\{115, 96, 30, 1; 1, 10, 96, 175\}$ is an $AT4$-graph. The antipodal quotient $\bar{\Gamma}$ has parameters $(392, 115, 18, 40)$, and its first and second neighborhoods of vertices are strongly regular with parameters $(115, 18, 1, 3)$ and $(276, 75, 10, 24)$. Moreover, the second neighborhood of any vertex in $\Gamma_2(u)$ has intersection array $\{75, 64, 18, 1; 1, 6, 64, 75\}$ and is a 4-cover of a strongly regular graph with parameters $(276, 75, 10, 24)$. Earlier, Makhnev, Paduchikh, and Samoilenko found possible automorphisms of a graph with parameters $(392, 115, 18, 40)$ and of a graph with intersection array $\{115, 96, 30, 1; 1, 10, 96, 175\}$. In this paper we find automorphisms of a graph with intersection array $\{75, 64, 18, 1; 1, 6, 64, 75\}$. It is proved that the automorphism group of this graph acts intransitively on the set of its antipodal classes.

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

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