



ON THE SECOND LEAST DISTANCE EIGENVALUE OF A GRAPH*

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Abstract. Let G be a connected graph on n vertices, and let $D(G)$ be the distance matrix of G . Let $\partial_1(G) \geq \partial_2(G) \geq \dots \geq \partial_n(G)$ denote the eigenvalues of $D(G)$. In this paper, the connected graphs with $\partial_{n-1}(G)$ at least the smallest root of $x^3 - 3x^2 - 11x - 6 = 0$ are determined. Additionally, some non-isomorphic distance cospectral graphs are given.

Key words. Distance matrix, Second least distance eigenvalue, Distance cospectral graph.

AMS subject classifications. 05C50.

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