

عنوان مقاله:

The distance spectrum of two new operations of graphs

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نویسندگان:

Zikai Tang - Key Laboratory of Computing and Stochastic Mathematics (Ministry of Education), College of Mathematics and Statistics, Hunan Normal University, Changsha, Hunan 410081, P. R. China

Renfang Wu - Key Laboratory of Computing and Stochastic Mathematics (Ministry of Education), College of Mathematics and Statistics, Hunan Normal University, Changsha, Hunan 410081, P. R. China

Hanlin Chen - Key Laboratory of Computing and Stochastic Mathematics (Ministry of Education), College of Mathematics and Statistics, Hunan Normal University, Changsha, Hunan 410081, P. R. China

Hanyuan Deng - Key Laboratory of Computing and Stochastic Mathematics (Ministry of Education), College of Mathematics and Statistics, Hunan Normal University, Changsha, Hunan 410081, P. R. China

خلاصه مقاله:

Let G be a connected graph with vertex set $V(G) = \{v_1, v_2, \dots, v_n\}$. The distance matrix $D = D(G)$ of G is defined so that its (i, j) -entry is equal to the distance $d_G(v_i, v_j)$ between the vertices v_i and v_j of G . The eigenvalues $\{\mu_1, \mu_2, \dots, \mu_n\}$ of $D(G)$ are the D -eigenvalues of G and form the distance spectrum or the D -spectrum of G , denoted by $\text{Spec}_D(G)$. In this paper, we introduce two new operations $G_1 \square_k G_2$ and $G_1 \circ_k G_2$ on graphs G_1 and G_2 , and describe the distance spectra of $G_1 \square_k G_2$ and $G_1 \circ_k G_2$ of regular graphs G_1 and G_2 in terms of their adjacency spectra. By using these results, we obtain some new integral adjacency spectrum graphs, integral distance spectrum graphs and a number of families of sets of noncospectral graphs with equal distance energy.

کلمات کلیدی:

Adjacency spectrum, Distance spectrum, Distance energy

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