

NORMALIZED LAPLACIAN SPECTRUM OF SOME Q -CORONAS OF TWO REGULAR GRAPHS

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Abstract

In this paper we determine the normalized Laplacian spectrum of the Q -vertex corona, Q -edge corona, Q -vertex neighborhood corona, and Q -edge neighborhood corona of a connected regular graph with an arbitrary regular graph in terms of normalized Laplacian eigenvalues of the original graphs. Moreover, applying these results we find some non-regular normalized Laplacian co-spectral graphs.

Keywords: Normalized Laplacian matrix, Q -vertex corona, Q -edge corona, Q -vertex neighborhood corona, Q -edge neighborhood corona, Kronecker product, Hadamard product.

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