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NEW RESULTS ON α–SPECTRAL RADIUS OF GRAPHS

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Abstract. For $0 \leqslant \alpha < 1$, Nikiforov proposed to study the spectral properties of the family of matrices $A_\alpha(G) = \alpha D(G) + (1-\alpha)A(G)$ of a graph G, where $D(G)$ is the degree diagonal matrix and $A(G)$ is the adjacency matrix. The α-spectral radius of G is the largest eigenvalue of $A_\alpha(G)$. For $0 \leqslant \alpha < 1$, we give a lower bound for the α-spectral radius, and bounds for the maximum and minimum entries of the α-Perron vector, and we determine the unique graph with maximum α-spectral radius among graphs with given number of odd vertices.

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