THE MINIMUM SPECTRAL RADIUS OF GRAPHS WITH A GIVEN CLIQUE NUMBER

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Abstract. In this paper, it is shown that among connected graphs with maximum clique size \( \omega \), the minimum value of the spectral radius of adjacency matrix is attained for a kite graph \( PK_{n-\omega,\omega} \), which consists of a complete graph \( K_{\omega} \) to a vertex of which a path \( P_{n-\omega} \) is attached. For any fixed \( \omega \), a small interval to which the spectral radii of kites \( PK_{m,\omega} \), \( m \geq 1 \), belong is exhibited.

Key words. Adjacency matrix, Largest eigenvalue, Spectral radius, Clique number, Kite graph.

AMS subject classifications. 05C35, 05C50, 05C09.