On ordering bicyclic graphs with respect to the Laplacian spectral radius

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References:


Abstract:

A connected graph of order $n$ is bicyclic if it has $n+1$ edges. He et al. [C.X. He, J.Y. Shao, J.L. He, On the Laplacian spectral radii of bicyclic graphs, Discrete Math. 308 (2008) 5981–5995] determined, among the $n$-vertex bicyclic graphs, the first four largest Laplacian spectral radii together with the corresponding graphs (six in total). It turns that all these graphs have the spectral radius greater than $n−1$. In this paper, we first identify the remaining $n$-vertex bicyclic graphs (five in total) whose Laplacian spectral radius is greater than or equal to $n−1$. The complete ordering of all eleven graphs in question was obtained by determining the next four largest Laplacian spectral radii together with the corresponding graphs.

Keywords:

Spectral ordering, Bicyclic graph, Laplacian spectral radius