ON THE ABC SPECTRAL RADIUS OF CACTUS GRAPHS

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Abstract. Let G be a graph with vertex set $V(G)$. Denote by d_u the degree of vertex u in G. The ABC matrix of G, proposed by Estrada, is the matrix $(ABC_{uv})_{u,v \in V(G)}$, where $ABC_{uv} = \sqrt{\frac{d_u + d_v - 2}{d_u d_v}}$ if u and v are adjacent, and 0 otherwise. The ABC spectral radius of G is the largest eigenvalue of the ABC matrix of G. In this paper, we determine the unique cactus graph with the largest ABC spectral radius among all cactus graphs with fixed order and number of cycles, and the cactus graphs of order n with the first a few largest ABC spectral radii for $n \geqslant 4$.

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