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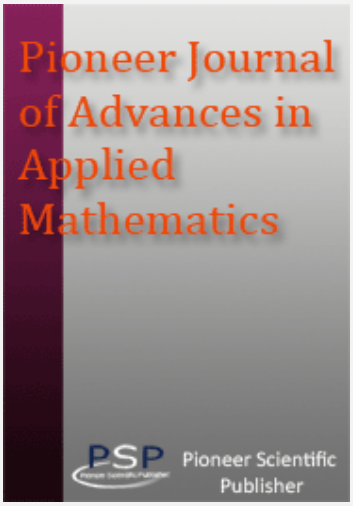

HAMILTONIAN PATHS AND INDEPENDENCE TREE

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Abstract

Let $G = (X \bigcup Y, E)$ be a connected balanced bipartite graph of order $2n$ and vertex connectivity $\kappa(G)$ at least five. A spanning tree T of G (tree of G containing each vertex of G) is an independence tree, if the set of end vertices (vertices with degree one in T) is an independent set in G. If G has an independence tree T, then $\alpha_t^B(G, T)$ denotes the cardinality of the balanced set of end vertices in T and we define $\alpha_T^B(G)$ as the maximum $\alpha_t^B(G, T)$, for every independence tree T in G. In this paper we show that if $\alpha_T^B(G) \leq \kappa(G)$, then between each pair of vertices u in X and v in Y there exists a Hamiltonian path (path of G containing each vertex of G).

Keywords and phrases: balanced bipartite graph, independence tree, vertex connectivity, Hamiltonian path.