ON A SPANNING $k$-TREE IN WHICH SPECIFIED VERTICES HAVE DEGREE LESS THAN $k$

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Abstract

A $k$-tree is a tree with maximum degree at most $k$. In this paper, we give a degree sum condition for a graph to have a spanning $k$-tree in which specified vertices have degree less than $k$. We denote by $\sigma_k(G)$ the minimum value of the degree sum of $k$ independent vertices in a graph $G$. Let $k \geq 3$ and $s \geq 0$ be integers, and suppose $G$ is a connected graph and $\sigma_k(G) \geq |V(G)| + s - 1$. Then for any $s$ specified vertices, $G$ contains a spanning $k$-tree in which every specified vertex has degree less than $k$. The degree condition is sharp.

Keywords: spanning tree, degree bounded tree, degree sum condition.

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References


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