

HEAVY SUBGRAPH CONDITIONS FOR LONGEST CYCLES TO BE HEAVY IN GRAPHS

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Abstract

Let G be a graph on n vertices. A vertex of G with degree at least $n/2$ is called a heavy vertex, and a cycle of G which contains all the heavy vertices of G is called a heavy cycle. In this note, we characterize graphs which contain no heavy cycles. For a given graph H , we say that G is H -heavy if every induced subgraph of G isomorphic to H contains two nonadjacent vertices with degree sum at least n . We find all the connected graphs S such that a 2-connected graph G being S -heavy implies any longest cycle of G is a heavy cycle.

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