

AN IMPLICIT WEIGHTED DEGREE CONDITION FOR HEAVY CYCLES¹

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Abstract

For a vertex v in a weighted graph G , $id^w(v)$ denotes the implicit weighted degree of v . In this paper, we obtain the following result: Let G be a 2-connected weighted graph which satisfies the following conditions: (a) The implicit weighted degree sum of any three independent vertices is at least t ; (b) $w(xz) = w(yz)$ for every vertex $z \in N(x) \cap N(y)$ with $xy \notin E(G)$; (c) In every triangle T of G , either all edges of T have different weights or all edges of T have the same weight. Then G contains either a hamiltonian cycle or a cycle of weight at least $2t/3$. This generalizes the result of Zhang *et al.* [9].

Keywords: weighted graph, hamiltonian cycles, heavy cycles, implicit degree, implicit weighted degree.

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