Every $K_{1,7}$ and $K_{1,3}$-free, 3-vertex critical graph of even order has a perfect matching

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Abstract

Ananchuen and Plummer in [Matchings in 3-vertex-critical graphs: the even case, *Networks*, Vol. 45 (4) (2005), pp. 210–213] began the study of matchings in 3-vertex-critical graphs. They showed that any 3-vertex-critical graph on an even number of vertices which is $K_{1,5}$-free must have a perfect matching. Also they conjectured that this is also true when G is $K_{1,7}$-free. In the present paper we prove this conjecture when G is triangle-free.

Keywords and phrases : *Vertex-critical graph, perfect matching.*

1. Introduction

Let G be a finite simple graph with vertex set $V(G)$ and edge set $E(G)$. A vertex dominates all vertices that are adjacent to it. Also a vertex