Summary: A graph $G$ is said to be well-covered if every maximal independent set of vertices has the same cardinality. A planar (simple) graph in which each face is a triangle is called a triangulation. It was proved in an earlier paper [A. Finbow, B. Hartnell, R. Nowakowski, and M. Plummer, “On well-covered triangulations. I,” Discrete Appl. Math. 132, No. 1-3, 97–108 (2003; Zbl 1029.05114)] that there are no 5-connected planar well-covered triangulations, and in [A. Finbow, B. Hartnell, R. Nowakowski, and M. Plummer, “On well-covered triangulations. II,” Discrete Appl. Math. 157, No. 13, 2799–2817 (2009; Zbl 1209.05166)] that there are exactly four 4-connected well-covered triangulations containing two adjacent vertices of degree 4. It is the aim of the present paper to complete the characterization of 4-connected well-covered triangulations by showing that each such graph contains two adjacent vertices of degree 4.

MSC:
05C69 Vertex subsets with special properties (dominating sets, independent sets, cliques, etc.)

Keywords:
well-covered graph; maximal independent set; 4-connected planar triangulation

Full Text: DOI

References:

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