

EDGE-CONNECTIVITY AND EDGES OF EVEN FACTORS OF GRAPHS

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Abstract

An even factor of a graph is a spanning subgraph in which each vertex has a positive even degree. Jackson and Yoshimoto showed that if G is a 3-edge-connected graph with $|G| \geq 5$ and v is a vertex with degree 3, then G has an even factor F containing two given edges incident with v in which each component has order at least 5. We prove that this theorem is satisfied for each pair of adjacent edges. Also, we show that each 3-edge-connected graph has an even factor F containing two given edges e and f such that every component containing neither e nor f has order at least 5. But we construct infinitely many 3-edge-connected graphs that do not have an even factor F containing two arbitrary prescribed edges in which each component has order at least 5.

Keywords: 3-edge-connected graph, 2-edge-connected graph, even factor, component.

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