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On 2-Factors with Prescribed Properties in a Bipartite Graph

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摘要 Liu and Yan gave the degree condition for a balanced bipartite graph $G=(V_1, V_2; E)$ to have k vertex-disjoint quadrilaterals containing any given k independent edges e_1, \dots, e_k of G , respectively. They also conjectured that for any k independent edges e_1, \dots, e_k of G , G has a 2-factor with k cycles C_1, C_2, \dots, C_k with respect to $\{e_1, e_2, \dots, e_k\}$ such that $k-1$ of them are quadrilaterals. In this paper, we prove this conjecture.

关键词 [Bipartite graph](#) [Vertex-disjoint](#) [Quadrilateral](#) [2-Factor](#)

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Abstract Liu and Yan gave the degree condition for a balanced bipartite graph $G=(V_1, V_2; E)$ to have k vertex-disjoint quadrilaterals containing any given k independent edges e_1, \dots, e_k of G , respectively. They also conjectured that for any k independent edges e_1, \dots, e_k of G , G has a 2-factor with k cycles C_1, C_2, \dots, C_k with respect to $\{e_1, e_2, \dots, e_k\}$ such that $k-1$ of them are quadrilaterals. In this paper, we prove this conjecture.

Key words [Bipartite graph](#) [Vertex-disjoint](#) [Quadrilateral](#) [2-Factor](#)

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