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Graph decomposition with constraints on connectivity and minimum degree. (English)

Zbl 0792.05113

Capobianco, Michael F. (ed.) et al., Graph theory and its applications: East and West. Proceedings of the first China-USA international conference, held in Jinan, China, June 9-20, 1986. New York: New York Academy of Sciences,. Ann. N. Y. Acad. Sci. 576, 480-486 (1989).

A classic argument due to Erdős shows that every finite graph G with minimum degree $\delta(G) \geq \delta$ contains a spanning bipartite graph H with $\delta(H) \geq \lfloor \delta/2 \rfloor$. Jackson has proved that if $\delta(G) \geq \delta \geq 2$, then there exists a balanced spanning bipartite subgraph H with $\delta(H) \geq 1$. *C. Thomassen* [J. Graph Theory 7, 165-167 (1983; Zbl 0515.05045)], developing the Erdős argument, proved that every finite graph G with $\delta(G) \geq 12k$ contains a partition (X, Y) of $V(G)$ such that $\delta(X) \geq k$ and $\delta(Y) \geq k$. We discuss in this paper an, at least superficially, related question that arose from our interest [*R. J. Faudree* and *J. Sheehan*, Discrete Math. 46, 151-157 (1983; Zbl 0518.05047)] in size Ramsey numbers.

For the entire collection see [Zbl 0788.00046].

MSC:

05C70	Edge subsets with special properties (factorization, matching, partitioning, covering and packing, etc.)	Cited in **1** Document
05C40	Connectivity	
05C35	Extremal problems in graph theory	

Keywords:

decomposition; connectivity; minimum degree; spanning bipartite graph; balanced spanning bipartite subgraph; partition