

Zbl 209.28004

Erdős, Paul; Gerencsér, L.; Máté, A.

Problems of graph theory concerning optimal design (In English)

Combinat. Theory Appl., Colloquia Math. Soc. János Bolyai 4, 317-325 (1970).

[For the entire collection see Zbl 205.00201.]

Let G be a connected graph. $f(G, k)$ is the smallest integer for which there exists a set of $f(G, k)$ vertices of G so that every vertex of G is joined to at least one of these vertices by a path of length $\leq k$. The principal results of the authors state as follows: Let G have diameter $\leq 2k$. Then $f(G, K) \leq \sqrt{n \log n + o(n)}$. Further for every $d < 2^{-3/2}$ there is a graph of $n > n_O(d)$ vertices and diameter two for which $f(G, k) > d\sqrt{n \log n}$.

Classification:

05C99 Graph theory

05B30 Other designs, configurations