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Literatura

- [1] Berge C.: Graphes et hypergraphes, DUNOD, Paris, 1970.
- [2] Motzkin T. S. and E. G. Straus: Maxima of Graphs and a New Proof of a Theorem of Turán, Canadian Journal of Mathematics, Vol. XVII, p. 533—540.
- [3] Sauer N.: A Generalization of a Theorem of Turán, Journal of Combinatorial Theory 10, 109—112 (1971).

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Summary

ON AN EXTREMAL PROBLEM FOR GRAPHS WITH $\alpha(G) \leq 2$

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Let $n \geq 2$ be a given integer, and let K_n denote a complete, undirected graph with n nodes $u_1, u_2, \dots, u_n$, where it is assumed the graph not to contain loops and multiple edges. Further, let be given positive real numbers $c_1, c_2, \dots, c_n$ assigned respectively to $u_1, u_2, \dots, u_n$. For any partial graph G of K_n let us denote $\alpha(G)$ its number of stability (see [1]), and put $d_1(G), \dots, d_n(G)$ for the degrees of $u_1, \dots, u_n$ in G . At last, let $\mathcal{G}_n$ denote the family of all partial graphs G of K_n such that $\alpha(G) \leq 2$, and put

$$\tau_n(c_1, c_2, \dots, c_n) = \min_{G \in \mathcal{G}_n} \sum_{j=1}^n c_j d_j(G).$$

Certain bounds for $\tau_n(c_1, c_2, \dots, c_n)$ are obtained, and they are shown to be best possible. The author conjectures that

$$\tau_n(c_1, \dots, c_n) = \min_{a=1, \dots, \lfloor n/2 \rfloor} ((a-1)(c_1 + \dots + c_a) + (n-a-1)(c_{a+1} + \dots + c_n))$$

if $c_1 \geq c_2 \geq \dots \geq c_n > 0$.