
Zbl 248.05114**Erdős, Paul; Spencer, Joel***Imbalances in k -colorations.* (In English)**Networks 1, 379-385 (1972). [0028-3045]**

For the set $A = \{1, 2, \dots, n\}$, let $A^k = \{B \mid B \subseteq A, |B| = k\}$. A coloring of A is given by a map $g_k : A^k \rightarrow \{+1, -1\}$. For $B \subseteq A$, define $g_k(B) = \sum g_k(W)$, where the sum is taken over all subsets W of B for which $|W| = k$. Let $H_k(n) = \min \max |g_k(B)|$, where the maximum is taken over all subsets B of A and the minimum is taken over all functions g_k , defined above. The authors prove for $k \geq 1$ and n sufficiently large that $H_k(n)$ is bounded below by $C_k \cdot n^{(k+1)/2}$ and bounded above by $C'_k \cdot n^{(k+1)/2}$, where C_k and C'_k are positive absolute constants.

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Classification:

05C15 Chromatic theory of graphs and maps