

The k -shift graph of order n is the graph whose vertices are the k -element subsets of $[n] = \{1, 2, \dots, n\}$ and with two k -sets $A = \{a_1, a_2, \dots, a_k\}$ and $B = \{b_1, b_2, \dots, b_k\}$ adjacent iff $a_1 < a_2 = b_1 < a_3 = b_2 < \dots < a_k = b_{k-1} < b_k$. Erdős and Hajnal determined the chromatic number of such graphs to be $(1 + o(1)) \log_{(k-1)} n$, where $\log_{(t)} n$ is the t -fold iterated binary logarithm. A generalized shift graph has vertex set $\binom{[n]}{k}$, and a pair $A, B \in \binom{[n]}{k}$ are adjacent if and only if the elements of A and B occur in some prespecified pattern τ . Denote such a graph $G(n, \tau)$. In this talk, we show that $\chi(G(n, \tau)) = \Theta(\log_{(B(\tau)-2)} n)$, where B is a function depending only on the pattern τ . Joint work with C. Avart, T. Łuczak, V. Rödl.