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THE PACKING CHROMATIC NUMBER OF DISTANCE GRAPHS AND HANOI GRAPHS

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The packing chromatic number $\chi_\rho(G)$ of a graph G is the smallest integer p such that vertices of G can be partitioned into disjoint classes X_1, \dots, X_p where vertices in X_i have pairwise distance greater than i . First for $k < t$ we study the packing chromatic number of infinite distance graphs $D(k, t)$, i.e. graphs with the set \mathbb{Z} of integers as vertex set and in which two distinct vertices $i, j \in \mathbb{Z}$ are adjacent if and only if $|i - j| \in \{k, t\}$. We also study the packing chromatic number of Hanoi graphs. The Hanoi graph H_n corresponding to the allowed moves in the tower of Hanoi problem can be constructed by taking the vertices to be the odd binomial coefficients of Pascal's triangle computed on the integers from 0 to $2^n - 1$ and drawing an edge whenever coefficients are adjacent diagonally or horizontally.