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*Hamiltonicity of Bell and Stirling colour graphs*

The  $k$ -Bell colour graph of a graph  $G$  has as vertices the partitions of  $V(G)$  into at most  $k$  independent sets, with  $\Pi$  and  $\Lambda$  being adjacent if there exists  $x$  such that  $\Pi_{|V(G)-x} = \Lambda_{|V(G)-x}$ . The  $k$ -Stirling colour graph of  $G$  is defined similarly for partitions into exactly  $k$  independent sets.

We show that if  $|V(G)| = n$ , then the  $n$ -Bell colour graph of  $G$  is Hamiltonian unless  $G \cong K_n, K_n - e$ . We also show that for  $k \geq 4$ , the  $k$ -Stirling colour graph of a tree with at least  $k + 1$  vertices is Hamiltonian.