OWEN MERKEL, University of Waterloo

An optimal χ-Bound for (P_6, diamond)-free graphs

Given two graphs H_1 and H_2, a graph is (H_1, H_2)-free if it contains no induced subgraph isomorphic to H_1 or H_2. Let P_t be the path on t vertices and K_t be the complete graph on t vertices. The diamond is the graph obtained from K_4 by removing an edge. We show that every (P_6, diamond)-free graph G satisfies $\chi(G) \leq \omega(G) + 3$, where $\chi(G)$ and $\omega(G)$ are the chromatic number and clique number of G, respectively. This bound is tight and is attained by the complement of the 27-vertex Schläfli graph. This is joint work with Kathie Cameron and Shenwei Huang.