

Extreme Villainy

S. Holliday*, P. Johnson, R. Rubalcaba, M. Smith, M. Walsh

A simple, finite graph is properly colored with $k \geq \chi(G)$ colors. A villain arrives and rearranges the labels on the vertices so that they are as improperly coloring the graph as possible. The villainy parameter (and its variants) determine how much work the villain causes us. In this talk, we bound the parameters and evaluate them for several families of graphs.

Keywords: coloring