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Group Colorability of Graphs.

Group coloring was first introduced by Jaeger et al. [J. Combin. Theory Series B, (1992)]. They introduced a concept of group connectivity as a generalization of nowhere zero flows and its dual concept group coloring. In this paper, we investigated the properties of group colorability of graphs, especially for complete bipartite graphs. We also extended group coloring to multi-graphs. Upper bounds of group chromatic number for multi-graphs were given out, especially for K_5 -minor free graphs and $K_{3,3}$ -minor free graphs. (Received September 18, 2009)