

Orientations and Additive Colorings of Graphs

Ian Gossett, Wesleyan University

An additive coloring of a graph is a labeling of its vertices with positive integers so that the sum of the neighbors of any two adjacent vertices differs. Given an orientation D of a graph G , we introduce a new digraph $\mathcal{W}(D)$ that allows us to prove an additive coloring analog of the well-known Alon-Tarsi list coloring theorem. As a consequence of this theorem, we extend a list additive coloring result that was previously known only for bipartite graphs to a special class of tripartite graphs.