

Neighborhood Balanced Colorings of Graphs

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In this talk we define a new type of vertex coloring of a graph: the neighborhood balanced coloring. Given a simple graph G , we ask when $V(G)$ may be partitioned into two sets such that every vertex has an equal number of neighbors from each set. We often use the colors red and blue in this coloring, so we also refer to these colorings as red-blue colorings. We will discuss a number of results for common families of graphs, make connections to cordial labelings, and completely classify 4-regular circulants which possess this property.