An Enhanced Systematic Rotation Method for Coloring Plane Graphs

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The Four Color Theorem states that the regions of any plane graph can be colored with four colors such that no two regions sharing a boundary line have the same color. Both proving this claim and obtaining a four coloring for an arbitrary graph are nontrivial tasks. Some systematic color exchange algorithms for four coloring have been studied by Alfred Errera and Weiguo Xie. We now present modifications of these algorithms that have proven successful on a very large number (over 100 million) of randomly generated diverse graphs. These algorithms will be discussed and demonstated in this paper.

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