First-Fit chromatic number of various classes of graphs

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Abstract

The First-Fit chromatic number of a graph is the number of colors needed in the worst case of a greedy coloring. It is also called the Grundy number, which is defined to be the maximum number of classes in an ordered partition of the vertex set of a graph G into independent sets $V_1, V_2, \ldots, V_k$ so that for each $1 \leq i < j \leq k$, and for each $x \in V_j$ there exists a $y \in V_i$ such that x and y are adjacent.

In this talk, I will discuss the First-Fit chromatic number of outerplanar and planar graphs, random graphs, and Cartesian products of graphs.

This is a joint work with J. Balogh, S. Hartke and Q. Liu.