

Title: *On Strong Edge-Coloring of Graphs.*

Speaker: Jian Cheng

Affiliation: ERAU-Prescott

Abstract: Coloring a graph with the minimum number of colors is a classic problem in graph theory and has many applications. The strong edge-coloring problem originates from the channel assignment problem in some radio networks (graphs). The main problem is to determine the minimum number (strong chromatic index) of channels (colors) to be assigned so that one can avoid all primary or secondary interferences at each vertex in the radio network. A trivial upper bound on the strong chromatic index obtained via greedy algorithm is 2 times the square of the maximum degree of the graph. Erdős and Nešetřil (1985) proposed a tighter bound and conjectured that the best possible coefficient is 1.25. In this talk I will present the current progress to strong edge-coloring of graphs, and some open problems will be discussed at the end.