

1124-05-378

**Michael Ferrara, Ellen Gethner, Stephen Hartke, Derrick Stolee and Paul S Wenger\***  
(pwsma@rit.edu). *Precoloring Extension for Distinguishing Colorings.*

The *distinguishing number* of a graph  $G$ , denoted  $D(G)$ , is the minimum number of colors needed to color the vertices of  $G$  so that there are no nontrivial color-preserving automorphisms. In this talk we study how many vertices of a graph need to be left uncolored so that we can extend any partial precoloring of  $G$  with  $D(G)$  colors to a distinguishing coloring. We will go beyond graphs, also studying this parameter for the unit circle and the real line. This is joint work with Michael Ferrara, Ellen Gethner, Stephen Hartke, and Derrick Stolee. (Received September 13, 2016)