

1135-05-1256

Michael Ferrara* (michael.ferrara@ucdenver.edu). *Some Results on Ramsey-Type Problems for Graph Saturation.*

For a family \mathcal{F} of graphs, we say that a graph G is \mathcal{F} -saturated if G contains no element of \mathcal{F} as a subgraph, but for any edge $e \notin G$, $G + e$ contains some member of \mathcal{F} . We let $\text{sat}(n, \mathcal{F})$, the *saturation number* of \mathcal{F} , denote the minimum number of edges in an \mathcal{F} -saturated graph of order n .

In this talk, we will discuss several Ramsey-type problems in the setting of graph saturation. In 1987, Hanson and Toft conjectured the saturation number for the family of graphs that are Ramsey-minimal for a collection of cliques. We will present some prior progress toward this challenging problem, and some newer results for general families of graphs that we hope will provide some insight into the conjecture. From there, we will consider a related class of saturation problems for edge-colored graphs, with particular attention on some interesting differences between monochromatic and rainbow target graphs. (Received September 20, 2017)