

1125-15-2495 **Jephian C.-H. Lin*** (chlin@iastate.edu). *The minimum rank problem on loop graphs.*

A loop graph is obtained from a simple graph by designating each vertex as having or not having a loop. The minimum rank problem for a graph \mathcal{G} is to determine the smallest possible rank among symmetric matrices whose i, j -entry ($i = j$ is possible) is nonzero whenever i is adjacent to j , and zero otherwise. The zero forcing number, which is defined through a color-change game on graphs, provides a lower bound for the minimum rank. This talk will discuss different variations of the zero forcing numbers and introduce the odd cycle zero forcing number. (Received September 20, 2016)