Meeting: 1003, Atlanta, Georgia, SS 24A, AMS Special Session on Design Theory and Graph Theory, I

1003-05-1261 **Curtis Clark*** (cuclark@morehouse.edu), Department of Mathematics, Morehouse College, 830 Westview Drive, Atlanta, GA 30314. *On Maximal Ultimately Economical Subgraphs.* Preliminary report.

Let F be a graph with no isolated vertices and q edges. The economical F-achievement game on the complete graph K(n) is a two-player game. Player A first colors an edge green. Then Player B colors a different edge red. They continue alternately coloring the edges. The graph F is e-achievable on K(n) if Player A can make a copy of F in his color in q moves. The graph F is ultimately economical (u.e.) if there exists a t such that F is e-achievable on K(t). If a graph F is not ultimately economical, then the u.e. minus number of F, uemn(F), is the least number of edges that must be deleted from F so that the remaining subgraph is ultimately economical. We determine uemn(F) for cycles, theta-graphs, and complete bipartite graphs, and some bounds for complete graphs. We show that maximal u.e. subgraphs are not unique, and exhibit graphs F such that for any nonnegative integer r, uemn(F) = r. (Received October 04, 2004)