

1077-05-1006

**Luke Postle, Dan Cranston and Carl Yerger\*** (cayerger@davidson.edu), Department of Mathematics, Box 7059, Davidson, NC 28035. *Modified Linear Programming Weighting for Graph Pebbling*. Preliminary report.

Given a configuration of pebbles on the vertices of a connected graph  $G$ , a *pebbling move* is defined as the removal of two pebbles from some vertex and the placement of one of these on an adjacent vertex. The *pebbling number* of a graph  $G$  is the smallest integer  $k$  such that for each vertex  $v$  and each configuration of  $k$  pebbles on  $G$  there is a sequence of pebbling moves that places at least one pebble on  $v$ . We improve on results of Hurlbert who introduced a linear optimization technique for graph pebbling. In particular, we utilize a different set of weight functions that use graphs more general than trees. As a proof-of-concept, we apply new weight functions to some graphs from Hurlbert's paper and show both improvements to Hurlbert's bounds and possible limitations of this method. (Received September 15, 2011)