

1106-VN-520

**Matthew J Prudente\*** (mjp209@lehigh.edu), 8 Duh Dr, Apt 221, Bethlehem, PA 18015.

*Two-Player Pebbling on Diameter 2 Graphs*. Preliminary report.

Given a graph  $G$  with pebbles on the vertices, we define a *pebbling move* as removing two pebbles from a vertex  $u$ , placing one pebble on its neighbor  $v$  and discarding the other pebble as a toll. The *pebbling number*  $\pi(G)$  is the least number of pebbles needed so that every arrangement of  $\pi(G)$  pebbles can place a pebble on every goal vertex  $r$  through a sequence of pebbling moves. We introduce a new variation on graph pebbling called *two-player pebbling*. In this, players called the *mover* and the *defender* alternate moves, with the stipulation that the defender cannot reverse the previous move. The mover wins if they can place a pebble on the root and the defender wins if the mover cannot. We define  $\eta(G)$ , analogously, as the minimum number of pebbles such that given every configuration of the  $\eta(G)$  pebbles and every root vertex  $r$ , the mover has a winning strategy. We investigate winning strategies and configurations for both players on a special class of diameter 2 graphs (Received September 01, 2014)