Meeting: 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-05-706 **Carl Yerger*** (cyerger@hmc.edu) and **Nathaniel Watson** (ngwatson@artsci.wustl.edu).

Class 0, Deep, and Profound Graphs. Preliminary report.

A pebbling move is defined by removing two pebbles from some vertex of a connected graph G and placing one of these pebbles on an adjacent vertex. In general, a pebble can be moved to a root vertex v if given a sequence of pebbling steps, it is possible to place one pebble on v. Define the pebbling number of G to be the minimum number of pebbles that are sufficient such that given any initial configuration of pebbles, it is possible to move to any root vertex v in G. In 2004, Hetzel introduced the concept of deep graphs. A graph is deep if for each positive integer n less than or equal to the pebbling number of G, there exists an induced subgraph H of G such that the pebbling number of H is equal to n. We extend Hetzel's definition of deep graphs and prove some new structural and probabilistic results. (Received September 28, 2004)