Meeting: 1003, Atlanta, Georgia, SS 9A, AMS-MAA-SIAM Special Session on Research in Mathematics by Undergraduates, I

1003-05-1681 **Nathaniel Watson*** (ngwatson@artsci.wustl.edu), Washington University, Department of Mathematics, Cupples I, Room 100, Campus Box 1146, St. Louis, 63130-4899, **Cary Yerger** (cyerger@hmc.edu), Department of Mathematics, Harvey Mudd College, 1250 N. Dartmouth Ave, Claremont, CA 91711, and **Anant Godbole** (godbole@mail.etsu.edu), Department of Mathematics, Box 70663, East Tennessee State University, Johnson City, TN 37614. *Threshold and Complexity Results for Cover Pebbling.*

We consider the problem of cover pebbling the complete graph on n vertices using t pebbles that may or may not be distinguishable. How many pebbles does one need to be able to be very successful or very unsuccessful under the Bose-Einstein and Maxwell-Boltzmann schemes? Our main results show that a sharp threshold exists at a level that involves the golden ratio and another constant 1.5238 . . . respectively. Our second key result shows that the cover pebbling decision problem is NP-complete. (Received October 06, 2004)