1116-05-1567 **Glenn Hurlbert*** (`ghurlbert@vcu.edu`). *Graham's Pebbling Conjecture.*

In 1988 Lagarias and Saks had an idea for solving a number theoretic problem of Erdős and Lemke by modeling the problem with the movement of pebbles in a divisor lattice. In 1989 Chung carried out this idea successfully by proving that the so-called *pebbling number* of the d-dimensional cube is equal to the number of its vertices. In 2005 Elledge and Hurlbert extended the application of graph pebbling to zero-sum theory in finite abelian groups.

In light of Chung's result, Graham considered the following generalized statement. Let $\pi(G)$ denote the pebbling number of the graph G, and for two graphs G and H write $G\Box H$ for their Cartesian product. Graham conjectured that $\pi(G\Box H) \leq \pi(G)\pi(H)$.

In this talk we'll introduce the pebbling number, discuss results confirming Graham's conjecture, and share new approaches to the problem, including ideas such as the 2-pebbling property, class 0 graphs, and techniques from linear optimization. (Received September 20, 2015)