

CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, December 5
2:00 – 3:00 PM
Maria Sanford, Room 101

OPTIMAL PEBBLING IN HYPERCUBES USING ERROR-CORRECTING CODES

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Abstract: Pebbling is an area of graph theory in which we imagine placing pebbles on the vertices of a graph. Then, a pebbling move consists of removing two pebbles from one vertex, throwing one away, and moving the other to an adjacent vertex. We say a distribution of pebbles on a graph is solvable if it is possible to move a pebble to any vertex from that distribution by a sequence of pebbling moves. The optimal pebbling number of a graph G is the smallest number of pebbles required to create a solvable distribution on G . We show how to use some error-correcting codes to construct solvable distributions with $O(1.34^n)$ pebbles on the hypercubes Q^n . This approaches the theoretical lower bound that $(4/3)^n$ pebbles are required in any solvable distribution on Q^n .

For further information:
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