VCU Discrete Mathematics Seminar

Threshold Pebbling

Prof Neal Bushaw
(VCU)

Wednesday, Sept. 14
1:00-1:50

In person! in 4145 Harris Hall

& Zoom @ `https://vcu.zoom.us/j/92975799914`
`password=graphs2357`

Graph pebbling is a toy network transportation model in which a collection of pebbles are distributed to the vertices of a graph. A pebbling move consists of choosing two vertices which lie on a shared vertex and moving one pebble to an adjacent vertex – the second pebble is removed from the graph as payment for the move. One can turn this into a game in a natural way: player one arranges the pebbles and picks a target vertex, and player two must make repeated pebbling moves until they place a pebble on the target (or determine that it is impossible to do so).

In this talk we make two slight rule changes that change the game significantly: we allow for pebbling moves which have different costs depending on the direction of the move (e.g. perhaps one pebble is lost when moving North/South, but two pebbles are lost moving East/West). Then, we remove the player who removes the pebbles, instead picking an initial configuration at random. This is joint work with Nathan Kettle, and requires no special background knowledge.

For the DM seminar schedule, see:

`https://vcumath.github.io/Seminar/dms.html`