

1154-VP-1310      **Julianna Doo Ree Kim\*** ([julianna.kim1478@gmail.com](mailto:julianna.kim1478@gmail.com)), 2930 Francis Avenue APT 305, Los Angeles, CA 90005. *Characterize Sandpiles on Two and Three Vertices Graphs.*

A sandpile is a function that maps the vertices of a graph to the nonnegative integers. A vertex is stable if its image is smaller than the number of lines connected to it. In toppling, for every unstable vertex, one sand is sent down every line that starts at and leaves the vertex. We map graphs with varying lines and sinks and topple the vertices until all vertices are stable. There have been characterizations of sandpiles on  $\mathbb{Z} \times \mathbb{Z}$  and graphs with finite vertices with only one line between each neighboring vertices. In this talk, we determine necessary and sufficient conditions to stabilize sandpiles on two and three vertices graphs with varying number of lines connecting them. (Received September 14, 2019)