1163-05-1077   **Emily Cairncross**, **Joshua Carlson**, **Peter Hollander**, **Benjamin Kitchen**, **Emily Lopez** and **Ashley Zhuang*** (`azhuang@college.harvard.edu`). *Throttling for standard zero forcing on directed graphs.*

Zero forcing is a process of coloring in a graph that initially has blue and white vertices. The *color change rule* is applied repeatedly: a blue vertex u can force a white vertex w to become blue if w is the only white neighbor of u. This coloring procedure has connections to the inverse eigenvalue problem, and it has applications in engineering and physics. The idea of throttling is to give an optimal balance of resources and time when zero forcing. In particular, the *throttling number* of a graph minimizes the sum of the number of vertices initially blue and the number of time steps needed to color every vertex blue. The process of zero forcing can also be extended to directed graphs (digraphs), in which a white vertex w can be forced if it is the only white out-neighbor of a blue vertex u. This talk will present recent results on throttling for directed graphs. (Received September 14, 2020)