A Counterexample to a Conjecture on PSD Propagation Time

Ben Small*

In 2015, N. Warnberg conjectured that every PSD propagation time interval is full (that is, for any graph G, all possible propagation times between $\text{pt}_+(G)$ and $\text{PT}_+(G)$ are attainable by a minimum zero forcing set of G). This talk will discuss a 15-vertex counterexample, and how to construct other such graphs using graph joins. [PSD zero forcing can be viewed as an iterative vertex-coloring process on a graph G in which colored vertices can force uncolored neighbors, provided that no other neighbor belongs to the same connected component of uncolored vertices. Sets for which the process terminates with all vertices being colored are forcing sets, and the number of iterations required is their propagation time.]