

1067-15-1303

Darren D. Row* (ddrow@iastate.edu). *Computation of zero forcing number for some families of graphs.* Preliminary report.

For a simple undirected graph with each vertex initially colored either black or white, apply the rule that if a black vertex is adjacent to exactly one white vertex then that white vertex changes color to black. The zero forcing number of a graph is the smallest number of vertices needed to be initially colored black so that repeated applications of the rule will result in all vertices being black. Mathematicians study this parameter for its connection to the minimum rank/maximum nullity problem while physicists use it in studying quantum systems control. Techniques for computing zero forcing number for some families of graphs will be presented. (Received September 20, 2010)