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The Evacuation Number of a Graph

Joint work with Danielle Cox (Mount Saint Vincent University).

Graph evacuation is an eternal dominating-like process in which defending resources are single-use. That is, once a defender has been utilized to defend a vertex, it is not available in subsequent rounds. In this talk we examine the evacuation number of a graph, the fewest number of defenders needed so that imperilled persons appearing at unoccupied vertices can be eternally evacuated. We show the evacuation number is bounded by standard domination parameters, and that it is NP-hard to compute evacuation number of an arbitrary input graph.