

Fast Searching Games on Graphs

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Abstract

Given a graph, suppose that intruders hide on vertices or along edges of the graph. The fast searching problem is to find the minimum number of searchers required to capture all intruders satisfying the constraint that every edge is traversed exactly once and searchers are not allowed to jump. In this talk, we give lower bounds on the fast search number. We show that the fast searching problem is \mathcal{NP} -complete. We present efficient algorithms to compute the fast search number of trees, Halin graphs and cubic graphs. We also investigate the fast search number of complete bipartite graphs and hypercubes.

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