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1 Introduction

A graph is an ordered pair $G = (V, E)$ consisting of a finite nonempty set V of vertices and a set E of edges, where each edge is an unordered pair of vertices. A dominating set of a graph $G = (V, E)$ is a set $D \subseteq V$ such that each vertex not in D has at least one neighbor in D. A paired-dominating set is a dominating set whose induced subgraph contains at least one perfect matching [1].

Raz and Safra prove that the dominating set problem has no polynomial-time $c \log |V|$-approximation algorithms for some $c > 0$ unless P = NP [3].

Lin and Tu design an $O(m + n)$-time algorithm for interval graphs and an $O(m(m + n))$-time algorithm for circular-arc graphs [2].

References

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[3] R. Raz and S. Safra. A sub-constant error-probability low-degree test, and a sub-constant error-probability PCP characterization of NP. In *Proceedings of the 29th Annual ACM Symposium on Theory of Computing*, pages 475–484, 1998.