

Approximation Algorithms for Intersection Graphs

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Abstract. We study three complexity parameters that in some sense measure how chordal-like a graph is. The similarity to chordal graphs is used to construct simple polynomial-time approximation algorithms with constant approximation ratio for many \mathcal{NP} -hard problems, when restricted to graphs for which at least one of the three complexity parameters is bounded by a constant. As applications we present approximation algorithms with constant approximation ratio for maximum weighted independent set, minimum (independent) dominating set, minimum vertex coloring, maximum weighted clique, and minimum clique partition for large classes of intersection graphs.