

The Maximum Decycling Number of a Graph

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The decycling number of a graph G (denoted $\nabla(G)$) is the smallest size of a subset S of the vertex set $V(G)$ such that $G - S$ is acyclic. A decycling set of order $\nabla(G)$ is minimal with respect to the decycling property. In this talk we will explore the question, “Are there larger subsets of the vertex set which are also decycling sets yet minimal with respect to that property?”

We define a ∇ -critical set S of a graph G to be a subset of the vertex set which is a decycling set, but for every vertex v in S , $G - \{S - v\}$ contains a cycle. The *maximum decycling number* of a graph G (denoted $\nabla_m(G)$) is the maximum order of a ∇ -critical set of G .

Keywords: decycling set, maximum decycling number, ∇ -critical set