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Talk Relations between some packing and covering parameters of graphs pp.: 1–3

Relations between some packing and covering parameters of graphs*

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Abstract

Many packing and covering parameters have been associated to an arbitrary graph $G = (V, E)$ which studying relations between them is very interesting problem in graph theory. In this paper we consider some of well-known packing and covering parameters such as matching ,vertex covering, domination and irredundance number and find interesting relations between them.

Keywords: Total domination number, Irredundance number, Matching number
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1 Introduction

Let $G = (V, E)$ be a simple graph. A set $D \subseteq V$ is a *dominating set* of G if every vertex in $V - D$ has a neighbor in D. The cardinality of a minimum dominating set of G is denoted by $\gamma(G)$. If, in addition, the induced subgraph $\langle D\rangle$ has no isolated vertex, then D is called a *total dominating set*. The cardinality of a minimum total dominating set of G is denoted by $\gamma_t(G)$. for more details about domination parameters you can see [1] or [4].

Definition 1.1. If every vertex of $V - D$ has exactly one neighbor in D and $\langle D\rangle$ is an empty induced subgraph of G, then we call D a perfect code or efficient dominating set.

Definition 1.2. If every vertex of $V - D$ is adjacent to exactly one vertex of D and induced subgraph $\langle D\rangle$ is also a matching, then we call D a total perfect code or efficient open dominating set.

Definition 1.3. The set $X \subseteq V$ is an OO-irredundant set if and only if for each $v \in X$, $N(v) - N(X \setminus \{v\}) \neq \emptyset$. The minimum cardinality among all maximal OO-irredundant set denoted by $ooir(G)$ and called OO-irredundance number of the graph G.

*Will be presented in English
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