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ss-EXCELLENCE IN GRAPHS

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Abstract: Let G be a simple graph with vertex set $V(G)$ and edge set $E(G)$. A subset S of $V(G)$ is called a semi-strong set abbreviated as *ss*-set if $|N[v] \cap S| \leq 1$ for all v in $V(G)$. This concept was introduced by E. Sampathkumar in the paper titled Semi-strong chromatic number of a graph. Any *ss*-set has hereditary property. That is, a subset of an *ss*-set is an *ss*-set. So, an *ss*-set is maximal iff for any $u \in (V-S)$, there exists $v \in V(G)$, $v \neq u$ such that v is adjacent with u and a vertex of S. Excellence is studied with respect to several parameters like domination. A vertex u is α-good with respect to the parameter α if u belongs to a minimum (maximum) α-set of G. A graph G is α-excellent if every vertex of G is α-good. A graph G is *ss* - excellent if every vertex of G is *ss* - good. *ss* - excellence and *ss* - just excellence are studied in this paper.

Keywords and Phrases: Semi-strong set, semi-strong partition, excellent, just-excellent.

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1. Introduction

As a generalization of strong set introduced by Claude Berge [2]. E. Sampathkumar defined semi-strong sets in a graph.In a simple graph G, a subset S