*The Self-Amalgamation of Coronas and Generalized Crowns**

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Abstract

Let $G = (V(G), E(G))$ be a finite, connected, simple graph. Let *u* and *v* be two vertices of *G* such that the distance between *u* and *v* is at least 3. A ***self-amalgamation*** of *G*, denoted by $G*$ with $* = (u, v)$, is the graph obtained by identifying *u* and *v*. A ***k*th *self-amalgamation*** of *G*, denoted by $G*^k$, is a self-amalgamation of a (*k*-1)st self-amalgamation of G, that is, $G*^k = (G*^{k-1})*$. A graph *G* is ***self-amalgamation stable*** (or ***amalgamation-stable***) if a $G*$ is not possible. If *G* is not amalgamation-stable, then the ***stability number*** of *G* is the minimum positive integer *k* such that there exists a $G*^k$ which is amalgamation-stable. The ***self-amalgamation number*** of *G*, denoted by $s(G)$, is the minimum positive integer *k* such that all the k^{th} self-amalgamations of *G* are amalgamation-stable. Results on the stability number and self-amalgamation number of coronas and generalized crowns are presented.

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