
BEN SEAMONE, Dawson College

Fractional eternal domination

We introduce the study of fractional eternal domination in graphs, a natural relaxation of the well-studied eternal domination problem. One can naturally define the fractional eternal domination number of a graph G , which is the smallest total weight for which one can fractionally eternally dominate G . We highlight connections to flows and linear programming, and study the behaviour of the fractional eternal domination number as it relates to other domination parameters. We also determine bounds on, and in some cases exact values for, the fractional eternal domination number of G when G is a member of one of a variety of important graph classes, including trees, split graphs, strongly chordal graphs, Kneser graphs, abelian Cayley graphs, and graph products.