A lower bound on the coupled domination number of n-vertex trees

Burak Y. Stodolsky

University of Illinois Urbana-Champaign

Abstract

Seo and Slater introduced the notion of coupled domination. In their paper they explored how large the coupled domination number $\gamma_{cpl}(G)$ has to be in paths, trees and cycles. They showed that there is a tree T with $\gamma(T) = 5$ and $\gamma_{cpl}(T) = 8$ which was the tree with the smallest ratio of $\frac{\gamma_{cpl}(T)}{\gamma(T)}$ in their paper. In this paper we show that $\frac{\gamma_{cpl}(T)}{\gamma(T)} \geq 1.5$ for every tree T except the tree on a single vertex.