

Graphs with a unique maximum independent set up to automorphisms

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Let G be a graph and let $S \subset V(G)$ has some property \mathcal{P} . By $\rho(G)$ we denote maximum (respectively minimum) cardinality of a subset of $V(G)$ with property \mathcal{P} . We say that G is ρ -unique if there is exactly one set $S \subset V(G)$ of cardinality $\rho(G)$ with property \mathcal{P} . Graphs with unique maximum independent set have been studied, inter alia, in [2] and [3].

A graph G is called ρ -iso-unique if for any two subsets $S_1, S_2 \subset V(G)$ of cardinality $\rho(G)$ there is an automorphism $\varphi \in \text{Aut}(G)$, such that $\varphi(S_1) = S_2$. In [1], we start the investigation into α -iso-unique graphs by giving the characterization of such trees and partially generalizing the results on chordal graphs. We state some results about the problem complexity and some results concerning α -iso-unique cartesian products.

References

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- [3] G. Hopkins, W. Staton, Graphs with unique maximum independent sets, *Discrete Math.* 57 (1985) 245–251.