

On Unique Independence Weighted Graphs

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An independent set in a graph G is a set of vertices no two of which are joined by an edge. A vertex-weighted graph associates a weight with every vertex in the graph. A vertex-weighted graph G is called a unique independence vertex-weighted graph if it has a unique independent set with maximum sum of weights. Although, in this talk we observe that the problem of recognizing unique independence vertex-weighted graphs is NP-hard in general and therefore no efficient characterization can be expected; we give some combinatorial characterizations of unique independence vertex-weighted graphs.

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