DISSERTATION
DEFENSE

On the Number of Edges in 2-factor Isomorphic Graphs

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Abstract: A 2-factor is a collection of disjoint cycles in a graph that cover all vertices of that graph. A graph is called 2-factor isomorphic if all of its 2-factors are the same when viewed as a multiset of unlabeled cycles.

In this dissertation, we find the maximum size of 2-factor isomorphic graphs that contain a desired 2-factor. We are also able to give general bounds when no 2-factor is specified or any 2-factor with a fixed number of cycles is desired. We also find similar results for the special case where the underlying graph is bipartite. In each case we provide constructions that attain the maximum size.

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