Isomorphic Decompositions of Complete Graphs into Unicyclic Graphs

by

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Abstract:

If G is a graph with n vertices, we say that the complete graph Kn has a G-decomposition if there are subgraphs G1,G2,...Gs of Kn, all isomorphic to G, such that each edge of Kn belongs to exactly one Gi. In 1967 Rosa proved that if a graph G admits certain types of labelings then it forms a G-decomposition of Kn. In this project we used alpha-labelings and near alpha-labelings to prove the existence of G-decompositions for unicyclic bipartite graphs of eight vertices.

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