

Decomposition of Complete Graphs Into Disconnected Triangular Graphs With 7 Edges

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A graph decomposition into G is done by partitioning a complete graph, K_n , into a set S of subgraphs. Each of these subgraphs of K_n is isomorphic to G such that each edge of K_n belongs to exactly one member of S .

In this talk, we prove that unicyclic triangular graphs on 7 edges decompose the complete graphs K_{14k+7} and K_{14k+8} for all integers $k \geq 1$. We accomplish this using σ^L , σ^{L_m} , m-rotational σ^{L_m} , and ad-hoc labelings. Combining our results and the work done in Banegas et al., who solved the case of $n = 14k$ and $n = 14k + 1$, we give the full spectrum for these graphs.

Keywords: graph decompositions, unicyclic graphs, Rosa-type labelings