

## Genus problems for complete multipartite graphs

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Thomassen showed that the problem of determining the genus of an arbitrary graph is NP-complete. However, exact formulae for the genus are known for certain families of graphs, most notably complete graphs and complete bipartite graphs, both of which are classes of complete multipartite graphs. There are other classes of complete multipartite graphs for which partial results on the genus are known, including complete tripartite graphs  $K_{l,m,n}$ , joins of edgeless and complete graphs  $\overline{K}_m + K_n = K_{1,1,\dots,1,n}$ , and complete equipartite graphs  $K_{m(n)} = K_{n,n,\dots,n}$ . We survey what is known, discuss some open problems, and describe some recent results.