The Free Product of Graphs

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The free product of graphs is a rarely used concept and mostly defined for rooted graphs, and then tuned to specific applications. Here we mainly use it for the construction of vertex transitive graphs from intransitive ones. Conversely, we use the generalized free product to derive a structure theorem for infinite vertex transitive graphs with cut vertices.

This is followed by a few remarks about the relationship with the free product of groups and that of Cayley graphs.

The main part of the talk, however, will be the characterization of infinite, regular median graphs with finite blocks.

We end with remarks about regular infinite median graphs with one or two ends, and the construction of vertex transitive infinite graphs from intransitive ones with the aid of the weak Cartesian product.