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Mike Daven* (daven@msmc.edu), Newburgh, NY 12550. *Multidesigns in graph products*. Preliminary report.

If the edges of a graph H can be partitioned into copies of a subgraph G , then we say G *divides* H . Such a partition is called a G -*decomposition* or G -*design*.

The graph multidecomposition problem is a variation of the above. By a *graph-pair of order t* , we mean two non-isomorphic graphs G_1 and G_2 on t non-isolated vertices for which $G_1 \cup G_2 \cong K_t$ for some integer $t \geq 4$. Given a graph-pair (G_1, G_2) , if the edges of H can be partitioned into copies of G_1 and G_2 with at least one copy of G_1 and one copy of G_2 , then we say (G_1, G_2) divides H . We refer to this partition as a (G_1, G_2) -*multidecomposition* or (G_1, G_2) -*multidesign*.

We will discuss the multidecomposition problem for the cartesian product and tensor product of paths, cycles, and complete graphs. (Received February 13, 2007)