

Meeting: 1004, Bowling Green, Kentucky, SS 2A, Special Session on Graph Theory

1004-05-240 **Atif Abueida*** (Atif.Abueida@notes.dayton.edu), 300 College Park, Dayton, OH 45469-2316.

Multidecomposition of the Complete graph with certain leave.

By a *graph-pair of order t* , we mean two non-isomorphic graphs G and H on t non-isolated vertices for which $G \cup H \cong K_t$ for some integer $t \geq 4$. Given a graph-pair (G, H) , if the edges of K_m can be partitioned into copies of G and H with at least one copy of G and one copy of H , we say (G, H) divides K_m . We will refer to this partition as a (G, H) -*multidecomposition*. When K_m does not admit a (G, H) -multidecomposition, we instead find a maximum *multipacking* and a minimum *multicovering*. A *multidesign* is a multidecomposition, a maximum multipacking, or a minimum multicovering. We consider the problem with certain leaves. (Received January 25, 2005)