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Multidecomposition of Complete Directed Graphs Into Directed Graph Pairs of Order 3 and 4

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Oral Presentation O5.3

**MULTIDECOMPOSITION OF COMPLETE DIRECTED GRAPHS
INTO DIRECTED GRAPH PAIRS OF ORDER 3 AND 4**

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A complete directed graph is a directed graph in which every vertex has an in and out arc connecting it to every other vertex. Given two directed graphs D and H , a (D,H) multidecomposition of the complete directed graph is a partition of the edges of the complete directed graph into copies of D and G where at least one copy of G and at least one copy of H is used. By finding a decomposition of a complete directed graph we can decompose larger graphs in order to assign them the properties associated with the graphs they decompose into. This paper shows how to decompose graphing pairs of order 3 and order 4 with pairings of sizes 3,9.