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Michael Babcock, Larry J. Langley and Sarah K. Merz* (smerz@pacific.edu), 1050
Brookside Road, Stockton, CA 95211. *A Combinatorial Approach to the Distinguishing Number of
a Tournament and Other Digraphs.*

The distinguishing number of a graph is the fewest number of colors needed to color the vertices (not necessarily properly) of the graph so that the only color preserving automorphism is the identity. Analogously, we can define the distinguishing number of a digraph. Albertson and Collins established the distinguishing number of graphs in several classes (e.g., cycles, paths, trees). Godsill proved that the distinguishing number of a tournament is at most 2. The proof of this fact relies on the structure automorphism group of a tournament. We consider a combinatorial approach to showing the distinguishing number of a tournament is at most 2, as well as the distinguishing number of other classes of digraphs. (Received September 19, 2007)