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Robert W. Peck* (rpeck@lsu.edu), 4339 Fleet Drive, Baton Rouge, LA 70809. *On the musical relevance of wreath products.*

Wreath products are familiar structures in mathematics, but they are relatively new to music theory. This study proposes a further investigation into the musical relevance of wreath products, drawing on examples from selected musical literature of the nineteenth and twentieth centuries. We begin by examining the notion of permutation isomorphism, as it applies to the action of a group on its orbit restrictions. Next, we define a direct product of the orbit restrictions. Finally, we allow a permutation of orbit restrictions, as a result of their particular structural identity, which yields the wreath product. We include musical examples from Robert Schumann's "Im wunderschönen Monat Mai," from Dichterliebe, op. 48; Richard Wagner's Siegfried; and Anton Webern's Cantata, op. 29. Finally, we consider some larger wreath products. One such group, of size 4608, includes as subgroups most of the important transformation groups in the standard music-theoretical literature, including those described in Hyer (1995), Hook (2002), Kochavi (2002), and Lewin (2003). (Received February 04, 2008)