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Robert W. Peck* (rpeck@lsu.edu), 102 School of Music Building, Louisiana State University, Baton Rouge, LA 70803. *Enumeration of modular rhythmic structures.*

We enumerate equivalence classes of modular rhythmic (metric) musical structures under the actions of various groups, particularly those that incorporate cyclic shift and line permutation. This study draws upon earlier work that enumerates musical structures, using Burnside’s Lemma and Pólya’s Theorem. However, these earlier investigations consider metric structures that incorporate only one line. The metric structures that we consider admit multiple lines. Adding permutation of these lines to the previous operations results in a more complex group action, an example of what Harary and Palmer call a “power group.” In this case, the power group has an action on the set of all functions from the set of lines to the set of metric positions. Harary and Palmer’s Power Group Enumeration Theorem offers a generalization of Pólya’s Theorem (more specifically, a derivation of de Bruijn’s Theorem) that permits us to count the equivalence classes of these complex metric structures merely on the basis of the cycle indices of the constituent group actions of metric shift and line permutation. (Received January 19, 2021)