

1125-05-1574

Robert W. Peck* (rpeck@lsu.edu), 102 School of Music, Louisiana State University, Baton Rouge, LA 70803. *Difference sets in mathematical music theory*. Preliminary report.

We investigate music-theoretical instances of difference sets in Generalized Interval Systems. Collections of pitches with flat interval distributions (or nearly flat distributions) are of particular interest in music theory, such as the all-interval tetrachords (0,1,4,6) and (0,1,3,7) in the modular space of twelve pitch classes. Generalized Interval Systems apply certain aspects of pitch intervals to other group structures. We draw on examples from cyclic, non-cyclic abelian, and non-abelian groups of order ≤ 57 . The flat-interval sets in these systems belong to three categories: $(v, k, 1)$ planar difference sets, (v, k, λ) non-planar difference sets, and (v, k, λ, t) almost difference sets. (Received September 20, 2016)