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**Jeremy Kastine\*** (jkastine@highlands.edu). *Rhythmic and Melodic L-Canons*. Preliminary report.

Let  $A$  be a finite set of real numbers, and let  $F$  be a finite set of transformations of the form  $f_{c,d} = cx + d$  where  $c \neq 0$ . We will say that  $(A, F)$  is a rhythmic L-canon provided that  $|f_{c_1,d_1}(A) \cap f_{c_2,d_2}(A)| \leq 1$  for distinct  $f_{c_1,d_1}, f_{c_2,d_2} \in F$  and  $|f_{c_1,d_1}(a_1) - f_{c_2,d_2}(a_2)| \in \{0\} \cup [1, \infty)$  for all  $f_{c_1,d_1}, f_{c_2,d_2} \in F$  and  $a_1, a_2 \in A$ . Given fixed  $|A|$  and  $|F|$ , the rhythmic L-canons of the most musical and mathematical interest are those for which  $\{f(a) : a \in A, f \in F\}$  has a relatively small range. In this talk, I will describe a process for finding rhythmic L-canons which are locally and globally optimal in this sense. I will also demonstrate how to extend rhythmic L-canons to melodic L-canons, in which each part is a transformed version of a single melody and any two parts are in unison whenever they overlap. (Received September 16, 2016)