1125-40-430 **Aaron Berger*** (aaron.berger@yale.edu), 18 Park Hill Terrace, West Windsor, NJ 08550. *The Maximum Length of k-bounded, t-avoiding Zero-sum Sequences over $\mathbb{Z}$.*

Let $\mathcal{S}$ be a multiset of integers. We say $\mathcal{S}$ is a *zero-sum sequence* if the sum of its elements is 0. We study zero-sum sequences whose elements lie in the interval $[-k, k]$ such that no subsequence of length t is also zero-sum. Augspurger, Minter, Shoukry, Sissokho, and Voss show that there are arbitrarily long zero-sum sequences with these restrictions unless t is divisible by $\mathrm{LCM}(2, 3, 4, \ldots, 2k-1)$. We confirm a conjecture of these authors that for k and t such that this divisibility condition holds, every zero-sum sequence of length at least $t + k^2 - k$ contains a zero-sum subsequence of length t, and that this is the minimal length for which this property holds. (Received September 01, 2016)