1158-13-301 **Jay Daigle*** (`gdaigle@oxy.edu`), **Dan Huth**, **Andrea Stine** and **Vena Zhang**. *Delta sets of arithmetic and geometric semigroups with respect to non-minimal generating sets.*

The delta set is an invariant that describes the factorization structure in a numerical semigroup, and recent research has revealed a great deal about the structure of delta sets, especially in semigroups with relatively simple minimal presentations.

We generalize delta sets to consider factorizations with respect to a fixed non-minimal generating set, such as $\{4, 6, 9, 20\}$. We specifically investigate semigroups generated by arithmetic or geometric sequences with one additional generator, and find complex patterns in their delta sets related to the Euclidean algorithm. (Received March 03, 2020)