1145-VL-2837 **Marly Cormar*** (marlycormar@ufl.edu), Department of Mathematics, University of Florida, Gainesville, FL 32611. *The elasticity and union of sets of lengths of Puiseux monoids.*

If M is an atomic monoid and x is a nonzero non-unit element of M, then the set of lengths $\mathsf{L}(x)$ of x is the set of all possible lengths of factorizations of x, where the length of a factorization is the number of irreducible factors (counting repetitions). In a recent paper, F. Gotti and C. O'Neil studied the sets of elasticities $\mathcal{R}(P) := \{\sup \mathsf{L}(x)/\inf \mathsf{L}(x) : x \in P\}$ of Puiseux monoids P. Here we take this study a step further and explore the local k-elasticities of the same class of monoids. We find conditions under which Puiseux monoids have all their local elasticities finite as well as conditions under which they have infinite local k-elasticities for sufficiently large k. Finally, we focus our study of the k-elasticities on the class of primary Puiseux monoids, proving that they have finite local k-elasticities if either they are boundedly generated and do not have any stable atoms or if they do not contain 0 as a limit point. (Received September 25, 2018)