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Thomas Barron, Christopher O'Neill* (coneill@math.tamu.edu) and **Roberto Pelayo**. *The Set of Elasticities in Numerical Monoids*.

In an atomic commutative monoid, the elasticity of an element provides a coarse measure of its non-unique factorizations by comparing the largest and smallest values in its set of factorization lengths (called its length set). Recent work examines the set of length sets as a factorization invariant for numerical monoids generated by arithmetic sequence (called arithmetical numerical monoids), and shows in particular that two such monoids can have the same set of length sets. In this talk, we present results from an undergraduate research project showing that the set of length sets for any arithmetical numerical monoid can be completely recovered from its set of elasticities. We also demonstrate the stark contrast between the set of length sets, which is often very large and hard to compute, with the set of elasticities, by showing that for more general numerical monoids, the latter is determined by only finitely many values. (Received August 29, 2014)