1146-05-22   **Elie Alhajjar**, **Travis Russell** and **Michael Steward*** (`michael.steward@westpoint.edu`).
Numerical Semigropus and Kunz Polytopes.

A numerical semigroup S is an additive submonoid of $\mathbb{N}$ whose complement is finite. The cardinality of $\mathbb{N} \setminus S$ is called the genus of S and is denoted by $g(S)$. The first nonzero element of S is called the multiplicity of S and is denoted by $m(S)$. In this talk, we focus on the number $N(m, g)$ of numerical semigroups with parameters m and g. It is known that $N(m, g)$ can be formulated as the number of integer points in a certain family of rational polytopes and hence coincides with a quasi-polynomial in g of degree $m - 2$. We show that the leading coefficient is constant and provide an interpretation for it. Moreover, we relate $N(m, g)$ to the number $MED(m, g)$ of maximally embedded numerical semigroups with the same parameters, hence proving a conjecture posed by Kaplan. (Received November 28, 2018)