1131-14-345 **Taylor Brysiewicz*** (tbrysiewicz@math.tamu.edu), 2101 Southwood Drive, Apt 7, College Station, TX 77840. *Computing Newton Polytopes via Witness Sets.*

Often a hypersurface is given as the image of a map and the defining polynomial is too costly to compute. Moreover, even when computable, this polynomial can be so large that it is not useful. The Newton polytope of this polynomial, however, encodes a large amount of algebraic and geometric data regarding the hypersurface and can be computed using a numerical algebraic geometry algorithm proposed by Hauenstein and Sottile. In this talk, I will give a brief introduction to numerical algebraic geometry, discuss this algorithm's current implementation, and show an example of its success on a hypersurface coming from algebraic vision. (Received July 18, 2017)