1167-18-54   **Jason McCullough*** (`jmccullo@iastate.edu`) and **Zachary Mere**. *Monomial Ideals and Koszul Quotients of Exterior Algebras.* Preliminary report.

For commutative algebras that are quotients of a polynomial ring over a field, several successively stronger notions have been well-studied: quadratic algebras, Koszul algebras, LG-quadratic algebras, and G-quadratic algebras. Each of these classes of algebras contains the succeeding one and there are examples to show the inclusions are strict. In the skew-commutative case, i.e. quotients of an exterior algebra over a field, all of these notions make sense (with slight modifications) but have not been systematically studied. We give the first known example of a skew-commutative LG-quadratic algebra that is not G-quadratic and consider whether all Koszul algebras are LG-quadratic. Along the way we prove some interesting bounds on the depth and complexity of edge ideals in exterior algebras. (Received February 11, 2021)