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**Cara Monical, Neriman Tokcan and Alexander Yong\***, Math Dept UIUC, 1409 W. Green St, Urbana, IL 61801. *Newton polytopes in algebraic combinatorics*.

A polynomial has *saturated Newton polytope* (SNP) if every lattice point of the convex hull of its exponent vectors corresponds to a monomial. We compile instances of SNP in algebraic combinatorics (some with proofs, others conjecturally): skew Schur polynomials; symmetric polynomials associated to reduced words, Redfield–Pólya theory, Witt vectors, and totally nonnegative matrices; resultants; discriminants (up to quartics); Macdonald polynomials; key polynomials; Demazure atoms; Schubert polynomials; and Grothendieck polynomials, among others.

Our principal construction is the *Schubitope*. For any subset of  $[n]^2$ , we describe it by linear inequalities. This generalized permutahedron conjecturally has positive Ehrhart polynomial. We conjecture it describes the Newton polytope of Schubert and key polynomials. We also define *dominance order* on permutations and study its poset-theoretic properties. (Received March 08, 2017)