# Sums of polynomials from degeneration in algebraic geometry

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Many interesting polynomials with positive coefficients are the "multidegrees" of (irreducible) algebraic varieties. We need to break these unbreakable objects, as we'd like to have formulae for these polynomials as positive sums; this breakage can be achieved through degeneration of the defining polynomials (as of a conic to the union of two lines, giving the degree formula 2=1+1).

I'll give many examples related to Schubert varieties, and explain how the geometry of the degeneration helps control the combinatorics, in suggesting shellings of related simplicial complexes. This work is joint with Ezra Miller and Alex Yong.

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