Dusty Grundmeier* (deg@math.harvard.edu), 1 Oxford St, Cambridge, MA 02138, and Jennifer Brooks. Algebraic Approaches to Hermitian Sums of Squares.

We study the class of bihomogeneous polynomials \( r(z, \bar{z}) \) for which there is a positive integer \( d \) such that \( r(z, \bar{z})\|z\|^{2d} \) can be written as a Hermitian sum of squares. We reinterpret this problem in terms of commutative algebra, and we give necessary algebraic conditions on this class of polynomials. (Received August 16, 2018)