

STABLE POLYNOMIALS, MATROIDS, AND SUMS OF SQUARES

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In 2004, Choe, Oxley, Sokal and Wagner established a tight connection between matroids and multiaffine real stable polynomials. Recently, Brändén used this theory and a polynomial coming from the Vámos matroid to disprove the generalized Lax conjecture. I will discuss the fascinating connections between these fields and how sums of squares can be used to test both for real stability and for determinantal representability of polynomials.