Gregory G. Smith: Â **Nonnegativity certificates on real projective varieties**

How can one use sums of squares to characterize nonnegative polynomials? Â In this talk, we will review the general methods for certifying that a homogeneous polynomial is nonnegative on a real projective subvariety. Â We will discuss an analogue of Bertini's Theorem in convex algebraic geometry and present new optimal degree bounds for certificates on real projective curves. Â This talk is based on joint work with Grigoriy Blekherman and Mauricio Velasco