Algebra Seminar

Positive Polynomials and Varieties of Minimal Degree

Daniel Plaumann
Universitat Konstanz

Abstract: A celebrated result by Hilbert says that every real nonnegative ternary quartic is a sum of three squares of quadratic forms. We show more generally that every nonnegative quadratic form on a real projective variety X of minimal degree is a sum of dim(X) + 1 squares of linear forms. This provides a new proof for one direction of a recent result due to Blekherman, Smith, and Velasco. We explain the geometry behind this generalization and discuss what is known about the number of equivalence classes of sum-of-squares representations. (Joint work with G. Blekherman, R. Sinn, and C. Vinzant)

Tuesday, September 6, 2016, 4:00 pm
Mathematics and Science Center: W306

Mathematics and Computer Science
Emory University