

Numerical Real Algebraic Geometry

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Large-scale polynomial systems arise in many applications including biology, chemistry, engineering, and physics. Often in these applications, only a few real isolated solutions and real connected components are of interest. Given a witness set for an irreducible algebraic set X , this talk will explore using various numerical algebraic geometric algorithms to compute the real connected components of the real points of X . This talk will conclude by demonstrating the algorithms on several of these applications.