

1142-65-68

Jonathan D. Hauenstein* (hauenstein@nd.edu). *Numerical Algebraic Geometry and Optimization.*

The field of numerical algebraic geometry aims to compute and manipulate solution sets to systems of nonlinear polynomial equations. One fundamental computational tool of numerical algebraic geometry is homotopy continuation which computes solution paths as the system of equations are deformed. Standard interior point methods for solving optimization problems can be viewed as a special case of homotopy continuation. This talk will explore this natural link via interior point methods between numerical algebraic geometry and optimization along with several other recent interactions. (Received August 27, 2018)