

Convex Algebraic Geometry

Bernd Sturmfels

UC Berkeley

Resumo/Abstract:

Convex algebraic geometry is an emerging field at the interface of convex optimization and algebraic geometry. A primary focus lies on the geometric underpinnings of semidefinite programming. This lecture offers a self-contained introduction. Starting with elementary questions concerning multifocal ellipses in the plane, we move on to discuss singularities and projections of spectrahedra, and new algorithms for semi-algebraic sets.