

On Some Properties of the Augmented Systems Arising in Interior Point Methods

C. Meszaros

A general direct approach to compute interior point iterations for optimization problems is to solve symmetric augmented systems. In the talk we describe the basic properties of the diagonal perturbations of these systems and the use of such perturbations to increase numerical robustness of interior point methods. We show the connection between diagonal perturbation and convexification techniques that are very important for interior point methods when solving nonconvex problems. A new efficient and computationally cheap technique is introduced for convexification and its usefulness is demonstrated by numerical experiments.