YURIY ZINCHENKO, University of Calgary, MS446, 2500 University Drive NW, Calgary, Alberta, Canada, T2N 1N4
Shrink-wrapping trajectories for linear programming

Hyperbolic Programming (HP)—minimizing a linear functional over an affine subspace of a real vector space intersected with hyperbolicity cone—is a class of convex optimization problems that contains Linear Programming (LP). For any LP one can readily provide a sequence of HP relaxations. Based on the hyperbolic relaxations, a new Shrink-Wrapping approach to solve LP has been proposed by Renegar. We study the geometry of Shrink-Wrapping trajectories for LP, which generalize the notion of central path in IPM. In particular, we analyze the geometry of these trajectories in the proximity of the so-called central line, and contrast the behavior of these trajectories with that of the central path for some pathological LP instances.