

Clarke Generalized Jacobian of the Projection onto Symmetric Cones and Its Applications

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Abstract

In this paper, we give an exact expression for Clarke generalized Jacobian of the projection onto symmetric cones, which is linked to rank-1 matrices. As an application, we employ the projection operator to design a semismooth Newton algorithm for solving nonlinear symmetric cone programs. The algorithm is proved to be locally quadratically convergent without assuming strict complementarity of the solution.