Geometric Properties for SOCP problem constraint on R2 and R3

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ABSTRACT

SOCP Problem (*Second Order Cone Programming*) is one developing problem of linear programming with constraint a cone equality or inequality. In linear programming problem, the important to be concerned of is the optimal solution obtained from the intersection of the problem constraints that can be proved as a convex region. The intersection usually obtained from plane or space region that has sides and angles. But in the SOCP problem, the results of the intersection require a more serious observation, because of the cone-shaped constraints, needed more guarantee convexity of the intersection from the plane or space.

This study discusses the properties of geometry in SOCP problems on R2 and R3. The SOCP problems discussed are SOCP problems with two constraints, plane and plane cones, plane cones and plane cones, in R2, any space and cones, cones and cones, on R3. To clarify, visualization is done using a computer program.

Kata Kunci: *SOCP problem, SOCP problem consraint, geometric properties*