数学与系统科学研究院

计算数学所学术报告

报告人： **Prof. Ruey-lin Sheu**

（ National Chung Kung University, Taiwan ）

报告题目：

A convex-based approach for solving quadratic programming with linear inequality constraints

邀请人： 戴彧虹 研究员

报告时间： 2015 年 1 月 6 日（周二）

下午 **16:30-17:30**

报告地点： 数学院南楼二层 **210** 会议室

Abstract：

An optimization problem which minimizes a quadratic function subject to a set of linear inequality constraints is usually referred to as Quadratic programming (QP). If the objective function is convex, (QP) is a convex problem and can be solved in polynomial time. In contrast, for an nonconvex QP, it is known to be NP-hard. By now, no universal method can globally solve (QP). The best attempts so far, including the active set method or the interior point method, can just either obtain the KKT points of (QP) or solve some special case of it.

In the talk, we first review some existing methods, techniques for QPs and point out the difficulty of nonconvex QPs by comparing with the extended trust region subproblems (eTRS). Then we present some of our early studies on nonconvex QPs. Our study focuses on two themes of the problem: we first study the attainment issue of a nonconvex QP. Then, for an attained QP, we show that it can be always reduced to a convex problem of smaller dimensions. However, the reduction cannot avoid enumerations on either vertices or facets of the polyhedron so that it might be very costly when the problem dimension is large.

欢迎大家参加！