数学与系统科学研究院

计算数学所学术报告

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报告题目：

A Scalable Conditional Gradient based Augmented Lagrangian Method for Large-Scale Linearly Constrained Convex Programming

邀请人： 优化与应用研究中心

报告时间：2015 年 7 月 4 日（周六）

上午 **11:40-12:20**

报告地点： 数学院南楼二层

219 会议室

Abstract：

In this talk, we consider the large-scale linearly constrained convex optimization problem, whose objective is a sum of a smooth function and a possibly nonsmooth function (with a bounded domain). We propose a scalable Conditional Gradient based Augmented Lagrangian (CndG-AL) method for solving the problem, which combines the ideas of the AL method and the CndG method. At each iteration, the proposed CndG-AL method employs the CndG method (or its variants) to inexactly solve the AL subproblem (of the original problem) with a fixed Lagrangian multiplier within a preselected solution tolerance and then updates the Lagrangian multiplier. The proposed CndG-AL method is well suitable to solve the considered large-scale problem, since the computational cost of each of its step is cheap. We analyze the non-ergodic convergence rate of the proposed CndG-AL method as well as its worst-case iteration complexity for returning an ϵ-optimal solution. To the best of our knowledge, this is the first paper analyzing the non-ergodic convergence rate of the inexact AL method. Our simulation results show that the proposed CndG-AL method compares favorably with the state-of-the-art methods when applied to solve the large-scale robust principal component analysis problem and the nearest correlation matrix problem.

欢迎大家参加！