数学与系统科学研究院

计算数学所学术报告

报告人： **Dr. Yaohua Hu**

（ *Shenzhen University* ）

报告题目：

Linearized proximal algorithms for convex composite optimization with applications

邀请人： 刘歆 副研究员

报告时间： 2016 年 5 月 23 日（周一）

上午 9:00-10:00

报告地点： 科技综合楼三层

311 报告厅

Abstract：

In this talk, we propose a linearized proximal algorithm (LPA) to solve a convex composite optimization problem. Each iteration of the LPA is a proximal minimization on the composition of the outer function and the linearization of the inner function at current iterate. The LPA has the attractive computational advantage in that the solution of each subproblem is a singleton, which avoids the difficulty of finding the whole solution set of the subproblem, as in the Gauss-Newton method (GNM), while it still maintains the same local convergence rate as that of the GNM. Under the assumptions of local weak sharp minima of order p (p belongs to [1,2]) and the quasi-regularity condition, we establish the local superlinear convergence rate for the LPA. We also propose a globalization strategy for the LPA based on the backtracking line-search and an inexact version of the LPA, as well as the superlinear convergence results. We further apply the LPA to solve a feasibility problem, as well as a sensor network localization problem. Our numerical results illustrate that the LPA meets the demand for an efficient and robust algorithm for the sensor network localization problem.

欢迎大家参加！