数学与系统科学研究院

计算数学所学术报告

报告人：　　陶敏 副教授

（ 南京大学数学系 ）

报告题目：

On the Linear Convergence Rate of a Generalized Proximal Point Algorithm

邀请人：　白中治 研究员

报告时间：**2015** 年 **8** 月 **8** 日（周六）

上午 **10:30~11:30**

报告地点：　科技综合楼三层

311 报告厅

Abstract:

The proximal point algorithm (PPA) has been well studied in the literature; in particular, its linear convergence rate has been studied by Rockafellar in 1976 under certain condition. We consider a generalized PPA in the generic setting of finding a root of a maximal monotone operator, and show that the condition proposed by Rockafellar can also sufficiently ensure the linear convergence rate for this generalized PPA. Both the exact and inexact versions of this generalized PPA are discussed. The motivation to consider this generalized PPA is that it includes more algorithms as special cases. Thus, linear convergence results of this generalized PPA can be used to better understand the convergence of some widely-used algorithms in the literature when the maximal monotone operator is specified into particular contexts. We focus on the particular convex minimization context and specify Rockafellar's condition to see how to ensure the linear convergence rate for some efficient numerical schemes, including the original ADMM proposed by Glowinski and Marrocco in 1975, and the generalized ADMM proposed by Eckstein and Bertsekas in 1992, both are special cases of the generalized PPA and have received wide attention. Some refined conditions weaker than existing ones are proposed in this particular context.

欢迎大家参加！