

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Jiawang Nie**

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报告题目:

Symmetric Tensor Decompositions

邀请人: 刘歆 副研究员

报告时间: **2018 年 6 月 26 日 (周二)**

下午 15:30-16:30

报告地点: 科技综合楼三层

311 报告厅

Abstract:

First-order methods have recently been very popular for solving large-scale optimization problems, partly due to its low per-iteration complexity. It has been well known that for smooth convex problems without constraint or with simple-to-project constraint, the best convergence rate of first-order methods is $O(1/k^2)$, where k is the number of gradient evaluations. In this talk, I will first present a linearized augmented Lagrangian method for affinely constrained convex problems. Each iteration, it performs linearization to the smooth part of the objective function but not to the augmented term. It enjoys $O(1/k^2)$ ergodic convergence rate in terms of both objective and feasibility error. Then I will show that if the augmented term is also linearized, $O(1/k)$ is a lower complexity bound, and thus $O(1/k^2)$ convergence rate is generally impossible to achieve. Finally, I will present an optimal first-order method for solving smooth convex programs with both affine and nonlinear functional constraints. Its complexity matches with the lower bound. Comparison to existing works will be discussed.

欢迎大家参加！