The Hong Kong Polytechnic University
Department of Applied Mathematics

Colloquium

On

Customized PPA for Convex Optimization —Motivation and Applications

by

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Abstract

The First order optimal conditions of the linearly constrained convex pro-gramming is a mixed monotone variational inequality in primal and dual variables. The proximal point algorithm (PPA) in Euclidean-norm is classical but abstract. Hence, PPA only plays an important theoretical role in optimization and it is rarely used in the practical scientific computation. In this talk, we introduce the recently developed customized PPA in *G*-norm (*G* is a positive definite matrix). In the frame of customized PPA, it is easy to construct the contraction-type methods for convex optimization with different linear constraints. In each iteration of the proposed methods, we need only to solve the proximal subproblems which have the closed-form solutions or can be efficiently solved up to a high precision. Guided by the frame of customized PPA, the alternating direction method of multipliers is modified and it becomes more efficient. Some novel applications and numerical experiments are reported.

Date : November 8, 2012 (Thursday)
Time : 02:30 p.m. – 03:30 p.m.
Venue : HJ610, The Hong Kong Polytechnic University

*** * * ALL ARE WELCOME * * ***