國立交通大學應用數學系
學術演講公告

主講人：陳鵬文 教授(中興大學 應用數學系)

講　題：Algorithms in phase retrieval

時　間：108 年 4 月 16 日(星期二) 下午 14:00 –15:00

地　點：(光復校區) 科學一館 223 室

茶　會：當天下午 1:30 (科學一館 205 室)

Abstract

Phase retrieval aims to recover one unknown vector from its magnitude measurements, e.g., coherent diffractive imaging, where phase information is unavailable. The recovery of phase information can be formulated as one minimization problem subject to a non convex high-dimensional torus set. In theory, uniqueness of solutions can be obtained under random masks.

The introduction of random masks actually breaks the symmetry of Fourier matrices and creates spectral gap for the local convergence of many phase retrieval algorithms, including alternative projection methods(AP) and Fourier Douglas-Rachford algorithm(FDR), which is one special case of Relaxed averaged alternating reflections(RAAR) family.

In this talk, we give a rather complete study on this conventional algorithm, in particular, on the effect of RAAR parameter.

Motivated by Augmented Lagrangian functions, we conduct the saddle-point analysis for the convergence of RAAR.

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