國立中正大學數學系
暨應用數學碩士班、統計科學碩士班

學　術　演　講

結構化問題的計算：互補問題、NLS 激發態與 AI 輔助研究
Computing Structured Problems: Complementarity Problems, Excited States of Nonlinear Schrödinger Equations, and AI-Assisted Research

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Abstract

In this talk, we show how hidden structure can make hard computational problems tractable. We first consider nonlinear complementarity problems. Once we know which components of the solution are positive, the problem reduces to an ordinary least-squares problem. This idea leads to the index search method, which we apply to nonnegative matrix factorization and image enhancement. We then turn to excited states of nonlinear Schrödinger equations. Cutting the problem along the sign changes of the solution splits it into several positive subproblems, each of which can be solved efficiently. Finally, we share our experience of using AI to prepare this talk.

日　期：115 年 12 月 9 日(星期三) 16:10~17:00

地　點：本校數學館 527 教室（嘉義縣民雄鄉大學路 168 號）

茶　會：15:30~16:00 數學館四樓 409 室舉行

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