國 立 清 華 大 學 數 學 系 學 術 演 講
NTHU MATH Colloquium

講題　　On Solving Robust Log-Optimal Portfolio

講者　　謝宗翰教授 (清大計財系)

時間　　2023.10.02 (Mon.) 15:30 – 16:30

地點　　第三綜合大樓**2樓 Room 201**

茶會　　15:00, Room 707

Abstract

A log-optimal portfolio is any portfolio that maximizes the expected logarithmic growth (ELG) of an investor's wealth, which typically assumes prior knowledge of the true return distribution. However, in practice, return distributions are often ambiguous; i.e., the true distribution is unknown, making this problem challenging to solve. In this talk, we introduce a supporting hyperplane approximation approach, reformulating a class of distributional robust log-optimal portfolio problems with polyhedron ambiguity sets into tractable robust linear programs. An efficient algorithm is presented to determine the optimal number of hyperplanes. Additionally, to adapt to the constantly changing market, we propose an online trading algorithm using a sliding window approach to solve a sequence of robust linear programs, offering significant computational advantages. The effectiveness of the proposed approach is supported by empirical studies using historical stock price data.