國 立 中 央 大 學

統 計 研 究 所

學 術 演 講

主 講 人：張志浩 教授（國立政治大學統計學系）

講　　　題：**Stable p-value Assignment in High-Dimensional Regression via Data Splitting**

時　　　間：112年10月17日（星期二）上午11：00 ～ 12：00

地　　　點：中央大學鴻經館M429室

茶　　　會：上午 10：30 ～ 11：00　　　地　點：鴻經館 510 室

ABSTRACT

High-dimensional regression models pose challenges in attributing valid p-values. This talk introduces an innovative methodology that synergistically employs multiple data splits, variable screening, stability selection, and copula-based p-value aggregation to ensure reliable inference. The proposed method involves data splitting into random subsets, executing variable screening on one subset, and deriving p-values for the identified variables through ordinary least squares on the complementary subset. Stability selection is then harnessed to pinpoint pivotal variables, after which p-values from various splits are amalgamated to yield valid p-values. The efficacy of this methodology is underpinned by rigorous theoretical validations, including controls for family-wise error rate (FWER) and false discovery rate (FDR), as well as consistency in variable selection. Through simulation studies, our technique showcases superior control over FWER and FDR and an enhanced statistical power to discern true variables compared to its counterparts.

This work is cooperated with Chien-Chung Wan（王建中,Colorado State University） and Hsin-Cheng Huang（黃信誠, Academia Sinica）.

Keywords：consistency, high-dimensional regression model, p-values, stability selection, variable selection.

◎敬請張貼　　　　　　　　　　　　　歡迎參加◎