



統計科學研究所

INSTITUTE OF
STATISTICAL SCIENCE



S E M I N A R



S T A T A S

Promotion Seminar

Title : A non-smoothing framework for inference on
functional means

Speaker : Dr. Hsin-wen Chang (張馨文 博士)

(Institute of Statistical Science, Academia Sinica)

Time : 10:30 AM~12:00 PM, Monday, Mar. 20, 2023

Place : Auditorium, B1F, Institute of Statistical Science

Abstract

This talk introduces a nonparametric inference framework that is applicable to occupation time curves derived from wearable device data. Motivated by the right-continuity of these curves, we develop a non-smoothing approach that involves weaker conditions than existing conditions imposed when using smoothing to estimate functional means under a fixed dense design. Notably, our procedure allows discontinuities in the functional covariances while accommodating discretization of the observed trajectories. Under this non-smoothing framework, we devise an empirical likelihood method to construct confidence bands for the functional means. Our method utilizes the known optimality of empirical likelihood. It also respects range and monotonicity constraints on occupation time curves. A simulation study shows that the proposed procedures outperform competing functional data procedures. We illustrate the proposed methods using wearable device data from an
N H A N E S s t u d y .

※ Online live streaming through Cisco Webex will be available.

※ The tea reception will be held at 10:10.