



統計科學研究所

INSTITUTE OF
STATISTICAL SCIENCE



SEMINAR



STATAS

Seminar

Title : On Estimation of the Logarithm of the Mean Squared Prediction Error of A Mixed-effect Predictor

Speaker : Prof. Thuan Nguyen

(Biostatistics group, OHSU-PSU School of Public Health)

Time : 10:00 ~ 11:00, Wednesday, August 2, 2023

Place : Auditorium, B1F, Institute of Statistical Science

Abstract

The mean squared prediction error (MSPE) has been used as an important measure of uncertainty in small area estimation. It is desirable to produce a second-order unbiased MSPE estimator. The task is difficult, however, especially if one needs to take into consideration that an MSPE estimator needs to be positive, or at least nonnegative. In fact, very few MSPE estimators have the property of being both second-order unbiased and guaranteed positive. We consider an alternative, easier approach of estimating the logarithm of the MSPE (log-MSPE), which avoids the issue of positivity. A second-order unbiased estimator of the log-MSPE is derived using the Prasad-Rao linearization method. Empirical studies demonstrate superiority of the proposed log-MSPE estimator over a naive log-MSPE estimator as well as an existing method known as McJack. A real-data example is considered. This work is joint with Jianling Wang, Yihui Luan of Shandong University and Jiming Jiang of the University of California, Davis.

※ Online live streaming through Cisco Webex will be available.

※ The tea reception will be held at 9:45.