國 立 中 央 大 學

統 計 研 究 所

學 術 演 講

主 講 人：高竹嵐 教授（國立交通大學統計學研究所）

講　　題：**Use of Marginal Likelihood Method in Change-Point Detection and Hidden Markov Models**

時　　間：**108年5月07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

This talk consists of three parts that incorporate my recent projects in marginal likelihood method. The first part introduces the use of marginal likelihood method on change-point detection with unknown number of change-points, which provides theoretical consistency, and also computation efficiency through dynamical programming. Second, the marginal likelihood method is further extended to the inference on Hidden Markov models (HMM) with unknown number of states. This method, unlike the commonly used BIC approach, does not suffer from the unboundedness issue. The consistency of this approach is given, and an efficient computation method is proposed by treating it as an estimation problem of certain normalizing constant. The third is an ongoing project that further connects the change-point detection and the inference of number of states. The concept is to first quickly divide the series into segments, and "merge" them into few groups that finally give an estimated number of states. This concept has recently been used on mixture models (Guha, Ho and Nguyen, 2019), but its performance on HMM is yet to be investigated. Joint works with Y. Chen, C. Du, C. D. Fuh, and S. C. Kou.

Keywords: Change-point detection, Hidden Markov model, model selection, marginal likelihood.

◎敬請張貼

歡迎參加◎