統計科學研究所
INSTITUTE OF STATISTICAL SCIENCE

統計所學術演講　中研院統計所

學　術　演　講

講　題：Bayesian Shrinkage Estimation for Persistent Homology

講　者：Prof. Chun-Hao Yang (楊鈞澔教授)

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時　間：2023年10月30日(星期一)，10:30-12:00

地　點：統計所B1演講廳

Abstract

Topological data analysis (TDA) refers to statistical methods that study the topological structure of data. Persistent homology is one of TDA's most commonly known tools. Persistent homology describes the persistence of topological features using the homology theory. In this talk, I will briefly introduce the persistent diagram, which is a graphical representation of the persistent homology, and how to use the persistent diagram to infer the topology of the data. Another important topological summary is the Betti number, which can be estimated from the persistent diagram. For example, the 0th Betti number is the number of connected components and the 1st Betti number is the number of 1-dim holes in the sample space. One of the important statistical questions is to estimate the Betti numbers. I will present a novel Bayesian model to obtain shrinkage estimates for the persistent diagrams and the Betti numbers.

※ 茶　會：10：10開始

※ 中文演講，實體與線上視訊同步進行。