

Optimal Designs for Sparse Functional Data

Ming-Hung (Jason) Kao

School of Mathematical and Statistical Sciences, Arizona State University, USA

Abstract

Sparse functional data analysis (FDA) is powerful for making inference on the underlying random function when noisy observations are collected at sparse time points. To have a precise inference, knowledge on optimal designs that allow the experimenters to collect informative functional data is crucial. Here, we propose a framework for selecting optimal designs to precisely predict functional principal and empirical component scores. New computational methods and theoretical results are developed. Their usefulness on obtaining optimal designs for sparse FDA is demonstrated via simulation studies and a real example. This is a joint work with Ping-Han Huang.