# 國 立 中 央 大 學

## 統 計 研 究 所

### 學 術 演 講

主 講 人：黃士峰 教授（國立高雄大學應用數學系）

講　　題：**Stock Market Trend Prediction Using Functional Time Series Approach**

時　　間：109年11月17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

Thanks to advanced technologies, ultra-high frequency limit order book (LOB) data are now available to data analysts. An LOB contains comprehensive information on all transactions in a market. We use LOB data to investigate the high frequency dynamics of market supply and demand (S-D) and inspect their impacts on intra-daily market trends. The intra-daily S-D curves are fitted with B-spline basis functions. Technique of multiresolution is introduced to capture inhomogeneous curvature of the S-D curves and a lasso-type criterion is employed to select a common basis set. Based on empirical evidence, we model the time varying coefficients in the B-spline interpolation by vector autoregressive models. The Xgboost algorithm is employed to extract information from the areas under the S-D curves to predict the intra-daily market trends. In the empirical study, we analyze the LOB data from LOBSTER (https://lobsterdata.com/). The results show that the proposed approach is able to recover the S-D curves and has satisfactory performances on both curve and market trend predictions.


◎敬請張貼

歡迎參加◎