## Model selection for high-dimensional time series

## Ching-Kang Ing

Academia Sinica

## Abstract

Model selection for high-dimensional regression models has been one of the most vibrant research topics in statistics and probability in the past decade. However, most of the attention has been devoted to situations where observations are independent, and hence time series data are precluded. In this talk, I shall address model selection problems for some high-dimensional time series models, including high-dimensional stochastic regression models and high-dimensional regression models with correlated errors. I shall present rates of convergence of the orthogonal greedy algorithm (OGA) under various sparsity conditions. I shall also show that when the high-dimensional information criterion (HDIC) of Ing and Lai (2011) is used in conjunction with the OGA, the resultant predictor achieves the optimal error rate.