

Abstract: In this talk, we consider statistical inference for stationary high-dimensional vector autoregressive models. We propose a multiple testing procedure to decide whether each component of the coefficient matrices is significantly zero or not, and prove that this controls the false discovery rate (FDR) below a pre-assigned level, while the power tends to unity. This “variable/lag selection” procedure is based on repeating marginal t-tests obtained by the de-biased lasso estimator. To improve the performance for high-dimensional situations, we also provide a bootstrapped version of this procedure. Numerical experiments support the theoretical results. We finally apply our procedure to the FRED-MD macroeconomic data and find a network relation among the economic variables. (This talk is based on a paper co-authored with Takashi Yamagata at University of York.)