

## Title: Wavelet Estimation for Dynamic Factor Models with Time-Varying Loadings

### Abstract:

We introduce a non-stationary high-dimensional factor model with time varying loadings. We propose an estimation procedure based on two stages. First, we estimate common factors by principal components. Afterwards, in the second step, considering the factors estimates as observed, the time varying loadings are estimated by an iterative procedure of generalized least squares using wavelet functions. We investigate the finite sample features of the proposed methodology by some Monte Carlo simulations. Finally, we use this methodology to study the electricity prices and loads of the Nord Pool power market.