

## **Abstract**

We introduce a changepoint detection algorithm which uses a linear decomposition of the precision matrix to identify a change in the partial correlation structure of a time series. Our approach uses likelihood ratio tests to identify clusters of dimensions that are responsible for the change, thus providing more of an explanation as to why the changepoint occurs. We also greatly reduce the number of hypothesis tests needed to identify the relevant group of dimensions causing the change when compared to fully local methods that test each component of the precision matrix individually. We demonstrate the competitive accuracy and run-time of our approach using several simulation studies, and we present three real-world case studies using our approach.