Improving the components independence of decomposition in time series data

ABSTRACT

This paper addresses the weakness of ensemble empirical mode decomposition approach in extracting the components of a time series signal data. In general, this approach provides non-independent component. The existing approach using cluster analysis provided an improvement yet not perfect. We then do a modification to reach components with two main characteristics. First, the components should reflect the true patterns. Second, the components are independent among the others as much as possible. By a small empirical study, we observe the modification we propose produces better results than the existing approaches.

Keyword: Ensemble approach; Time series data; Component; Intrinsic mode function; Cluster analysis