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Weighted multiscale Rényi permutation entropy of nonlinear time series

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Highlights

- We propose a modified permutation entropy measure extended from Shannon entropy to Rényi entropy.
- The multiscale method allows us to investigate the more abundant temporal structure of time series.
- We use the idea of weighting so that the modified measure, based on the weight assigned to each vector, can be robust to noise.
- The complex behaviors of synthetic time series and stock market data has been successfully detected.
- Stock markets of different areas are distinguished using our method and they show some interesting characteristics.

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