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Multiscale transfer entropy: measuring information transfer on multiple time scales

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Highlights

- A novel multiscale transfer entropy (MTE) is introduced.
- A time-delayed multiscale transfer entropy (TMTE) is proposed to minimize the finite size effects and spurious detection of causality.
- The MSTE can identify directional, dynamical and scale-dependent information flow of time series.
- Extensions of the MSTE method are explored.
- The new methods are effective to characterize information flows for the VAR models, ARFIMA processes, Rossler systems, and stock markets.

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