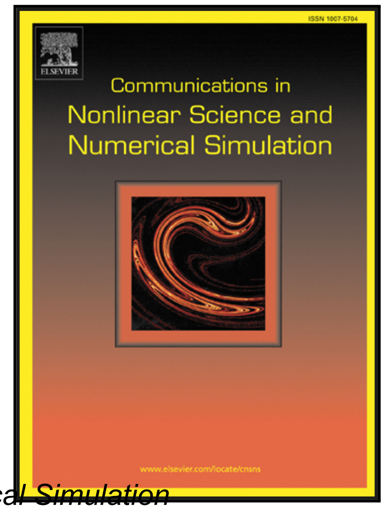

Transfer entropy between multivariate time series

Xuegeng Mao , Pengjian Shang

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HIGHLIGHTS

- We propose the method of transfer entropy based on the theory of time-delay reconstruction of a phase space.
- This method is a model-free approach to detect causalities in multivariate time series.
- It overcomes the limitation that the original transfer entropy only can capture which system drives the transition probabilities of another in scalar time series.
- We combine the closing price and trading volume as the two-dimension variables to estimate the causality relationships between different stock markets.