[P20] Finding modular structure in stock exchange market using transfer entropy

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Since many complex networks, such as biological networks, social networks, and economical networks, are known to have modules or communities, investigating their modular structure and relationship between modules have become one of the most important research areas to understand topological and dynamical properties of complex networks. In this study, we define transfer entropy based on the information flow between companies in stock exchange market. Using numerical analysis, we show that the modular structure found by the transfer entropy method agrees very well with the conventional partitioning of companies. We also discuss the sub-modular structure and the relationship between modules.