



Multifractal Detrended Fluctuation Analysis of Standard Precipitation Index Time Series

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Using multifractal detrended fluctuation analysis (MF-DFA) method, frequency series of SPI index have been analyzed. In this view we find this index long range correlated with Hurts exponent 0.7. Comparing MF-DFA results of original series to those for shuffled and surrogate series we can distinguish multifractality due to long-range correlations and a broad probability density function. Finally we determined generalized scaling exponent of partition function, multifractal dimensions, Holder exponent and singularity spectrum. We concluded correlation has more effect in its multifractality nature than fat tails.