Fractals -9

*Multifractal Detrended Cross Correlation Analysis (MF-DCCA, MF-DXA)*

The implementation of MF-DCCA algorithm is described as follows [1].

1. The first step is integration of original series  and to produce



where and is the average.

1. Next, the integrated series  and are divided into  non-overlapping segments of length  and in each segment the local trend and (linear or higher order polynomial least square fit) are estimated and subtracted from and
2. .The detrended covariance

is calculated for each segment and then averaged over all segments to obtain th order fluctuation function

where, in general,  can take any real value except zero.

1. Repeating this calculation for all box sizes provides the relationship between fluctuation function and box size. If long-term cross-correlations are present, increases with  according to a power law

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The scaling exponent is obtained as the slope of the linear regression of log versus.

A partir de , geram se:

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