

The Hurst parameter characterizes the degree to which a time series is long range dependent (LRD). The value of this parameter can be used as an input to algorithms for bandwidth allocation, buffer sizing and congestion control.

However, for these algorithms to be effective over the long run they must change their actions when the value of the Hurst parameter changes. We demonstrate a new technique which uses a wavelet decomposition to detect a change in the Hurst parameter. Our technique tests the variance structure of the wavelet coefficients at multiple scales and uses changes in variance to signal a change in the value of the Hurst parameter. The efficacy of the proposed technique is demonstrated by comparing its performance to that of another recently proposed method for change detection. The performance tests were conducted using artificially generated data sets which contain changes in the Hurst parameter of known position, magnitude and sign.