

# Cantor Detrended Fluctuation Analysis

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## Abstract

In this work, we propose a modification of the Detrended Fluctuation Analysis (DFA) algorithm, called the Cantor DFA (CDFA). The CDFA uses the Cantor set theory of base 3 as a scale for segment sizes in the DFA algorithm. Comparison of the Hurst exponents ( $H$ ) of the CDFA to that of the DFA using real time-series are investigated. By comparing it with  $\alpha$  of the Truncated Lévy Flight (TLF), we observe that the CDFA technique helps to reduce the overestimation problem of the  $H$  of the DFA while correctly predicting the memory behavior of the time series.