FRACTAL ANALYSIS TOOLBOX FOR MATLAB

Compiled and Developed By: Michael Richardson

Code Developed and Adapted From Numerous People Over the Years, including (but not limited to):
Jay Holden, University of Cincinnati
Charles Coey, University of Cincinnati & College of the Holy Cross
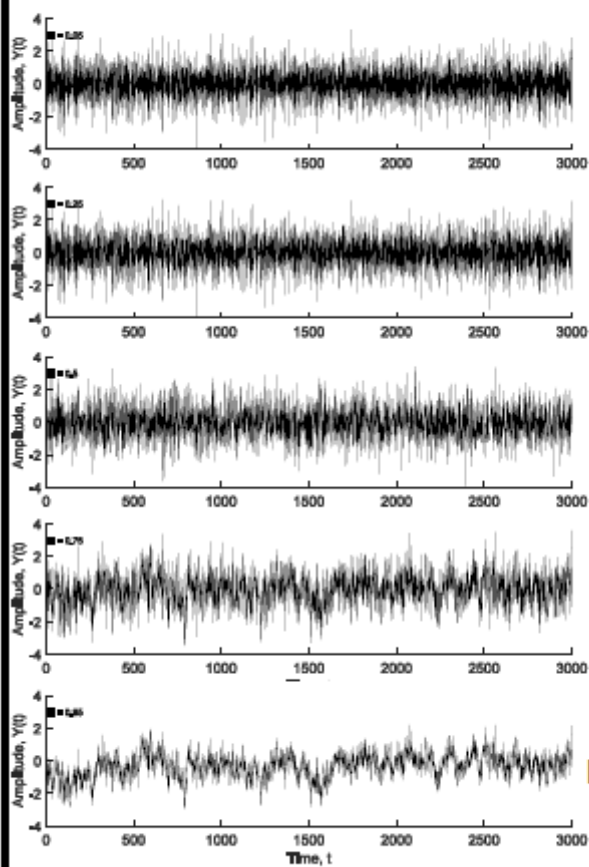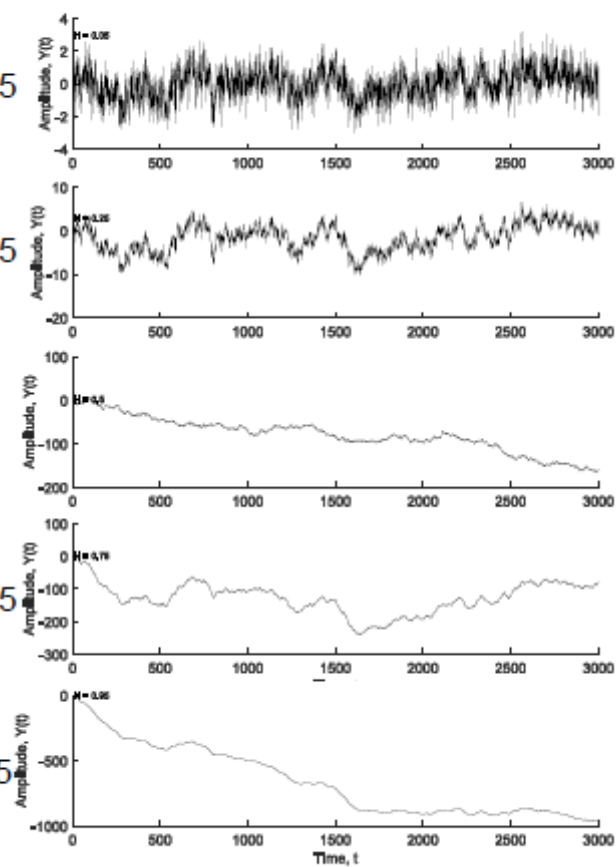**Nikita Kuznetsov,** University of Cincinnati
R. C. Schmidt, College of the Holy Cross

- **SDA.m -** Computes the standardized dispersion values of a times series. The input file must be a single column that is a power of two in length. Outputs log 2 bin size and log 2 standardized dispersion.

- **PSD.m -** Computes the power spectrum of a times series. The input file must be a single column that has at least 64 observations and is a power of two in length

- **DFA.m -** Computes the detrended fluctuation function for a times series. The input file must be a single column. Outputs log 2 bin size and log 2 dfa function values.

- **SimulatefGn -** At GUI application (run SimulatefGn.m) Generates synthesized fGn and FBm data time-series. Specify the color, the type of noise, and the data length, which must be an integer power of two (e.g., 1024). Outputs data to a file.

- **AutoCorrel -** Computes the autocorrelation function for a times series. The input file must be a single column. Outputs the autocorrelation function for the specified number of lags.

Full fGn/fBm Model