

Read signal predicted by Theory

Read Signal Module (Filepath)

↳ read netcdf file
↳ store info in signal struct
↳ use rarray

→ sig struct

Read Observed signal

Signal FFT Module (signal struct)

↳ compute fft of signal
↳ use FFTW from teach cluster

→ vector

Compute FFT of theory and signal

Signal Power Spectrum (FFT)

↳ Compute power spec of FF
↳ use cdotc from BLAS

→ Vector

Compute power Spectrum $F_k = |\hat{f}_k|^2 = \hat{f}_k \hat{f}_k^*$

$F_k \in \mathbb{R}^{(n,n)}$ cdotc

Compute the correlation co-eff by

$$C_{FG} = \langle F, G \rangle / \sqrt{\langle F, F \rangle, \langle G, G \rangle}$$

Get Correlation Co-eff of (F, G)

↳ use ddot BLAS to get $\langle \rangle$
↳ compute the algebra

→ double

Output Correlation Coef

handed in main()

Determine 5 most significant candidates from set

↳ possibly get max 5 using Quick Sort