PHYS 411 Time Series Analysis - Fall 2024

Instructor: Johannes Gemmrich

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                Available for discussions/questions: by appointment

Lectures: 9:30 – 10:20 Tue, Wed, Fri

Course information: bright.uvic.ca

Grading: Assignments (5):   40%

                Mid term exam: 16%

                Class participation: 4%

                Term project: 40%

                Late hand in (without previous discussion with me): -10%/day

Text book: The course does not follow a specific textbook. Suggestions for (online) textbooks are listed on the course Brightspace page.

                Material on the course Brightspace page

Course outline:

1) Introduction to time series analysis
2) Univariate statistics
3) Bivariate statistics
4) Time series, correlations
5) Data interpolation, gridding
6) Fourier series, Fourier transform
7) Power spectra estimation
8) Data filtering
9) Selected topics:
   - Principal component analysis
   - Wavelets
   - Empirical Mode decomposition