LAB NAME: Data Visualisation and Statistics

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* *use CTD data to look for relationships*
* correlations, t-tests, linear regressions
* maybe include TS diagrams

Lab style?

* Live coding
* 1 hr teaching time + 2 hr practice time

Lab Format:

1. **Statistics**
   1. Correlations, correlation coefficients, p-values (cross correlations?)
   2. linear regressions: slope, intercept, Rsquare, mean absolute error, bias
   3. t-tests
2. **Visualisation**
   1. Scatter plots: fitting lines
   2. Bar charts?
   3. Time series?

Lab Outline:

Aim of the lab: *use CTD data to look for relationships between variables*

1. Importing data (dealt with in Lab 1?)
2. Scatter plots and linear regressions
   1. plotting
      1. scatter
      2. best fit line
   2. stats
      1. slope, intercept, Rsquare, mean absolute error, bias
      2. correlations, correlaiton coefficients, p-values
3. TS diagrams
4. t-tests (& bar charts) - *a bit of a contrived example...*
   1. use discrete data and determine the mean chl conc for each station and depth
   2. use t-test to answer: is the surface chl conc different at station 1 compared to station 2?
   3. bar chart?
5. time series and cross-correlations *- data isn't really good for this...*
   1. plotting variables against time
   2. do cross or auto correlation