UCL Institute of Cognitive Neuroscience Matlab Course

Lecture 4: Practical Exercise

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Download the PlottingData.mat file that accompanies the Plotting lecture code from the course website. Then write a script which loads that data file and generates each of the following figures:

[1] A bar chart of the ErrorbarX and Errorbar Y data, where each bar has a light grey fill and solid black edges of line width 3. On the same figure, add an error bar plot with black dots and lines of width 3 to mark the Errorbar X, Errorbar Y and ErrorbarSE data. Add a label 'LFP Phase Bin' to the x-axis, in 24 point Times New Roman font; and a label 'Normalised Amplitude' to the y-axis, in the same size and font. Set the font size of all numerical labels on the x and y axes to 18 point. Set the y axis limits to -1.5 : 1.5. Finally, add the title 'Phase Modulation of Signal Amplitude' in 36 point Times New Roman, set the axes to be square, and save a pdf copy of the figure names 'PhaseAmpMod.pdf'

[2] Generate a subplot with three rows and one column. Plot 'PlotEEGTime' against 'PlotEEG', 'PlotEEG2' and 'PlotEEG3' in the first, second and third rows, with red, blue and green lines of width 3, respectively. Set the x-axis limits of each plot to the minimum and maximum values in 'PlotEEGTime', and the y-axis limits to -2000 : 2000. Label the x axis of the bottom (third row) plot as 'Time (s)' in 24 point Arial font. Set the y-axis label of each plot to 'Signal Amplitude (uV)' in 18 point Arial font. Save the figure as 'EEGTraces.png'

[3] Plot the data in 'PlotMEG' against the x-axis values in 'PlotMEGTime' with a line width of 2. Set the y-axis limits to -1500 : 1500. Add a legend in the top right hand corner of the figure with the labels 'MZF01', 'MLF21', 'MRF21' and 'MZF02', respectively. Add text to the figure at [0.15 1300] that reads 'Sample MEG Signals' in 16 point font. Set the x-axis limits to -0.2 : 1. Label the x-axis as 'Time (s)' and the y-axis as 'Signal Amplitude (fT)' in 16 point font. Make the figure square and save as a pdf file named 'MEGTraces'