

## Fitting Data with Matlab

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### Initial Setup (one time):

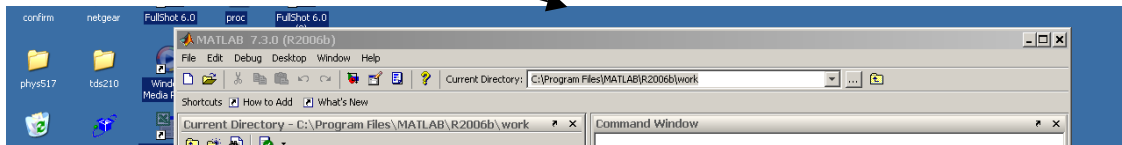
Make a directory `c:\Matlab_Fitting`. Copy the file:

[http://www.physics.ohio-state.edu/~durkin/phys517/Matlab/phys517\\_Matlab\\_fitting.zip](http://www.physics.ohio-state.edu/~durkin/phys517/Matlab/phys517_Matlab_fitting.zip)

into this directory and extract the scripts into this directory using WinZip.

### Running Matlab:

- 1) Run Matlab (*All Programs->MATLAB->R2006b->MATLAB R2006b*).
- 2) Using the desktop toolbar below change the current directory to `c:\Matlab_Fitting`.



### Fitting Scripts:

In the directory `c:\Matlab_fitting` are various fit examples that may prove useful in analyzing your data. The fit scripts read data entered into excel spread sheets. To test the fitting scripts, other scripts are provide (fakexxxx) that produce fake data that can be used to test the fit scripts.

As an example produce fake by data typing: `fakeRCampRat_HP` at the Matlab command prompt. This will produce a file `c:\Matlab_fitting\data.xls` containing fake RC high pass data for  $v_o/v_i$  (column B1) at various frequencies (column A1). To fit this data one merely types `RCampRat_HP` at the Matlab command prompt. Fit parameters will be printed out and a plot of data overlaid by theory will be displayed.

To fit your own data you enter your own data into `data.xls` (columns A1 B1) and run the script `RCampRat_HP`. Alternately you can modify the `xlsread` lines in `RCampRat_HP` to read in your data. Remember to change the 'Sheet1' field to 'New' if you used FrequencySweep to produce the xls file (see next section).

### Understanding, Creating, or Modifying Fitting Scripts:

Matlab script language is pretty simple. To view the commands one can open and modify the scripts within Matlab. To open up the m-file editor in Matlab just double click on the file in the Current Directory window (see below).

