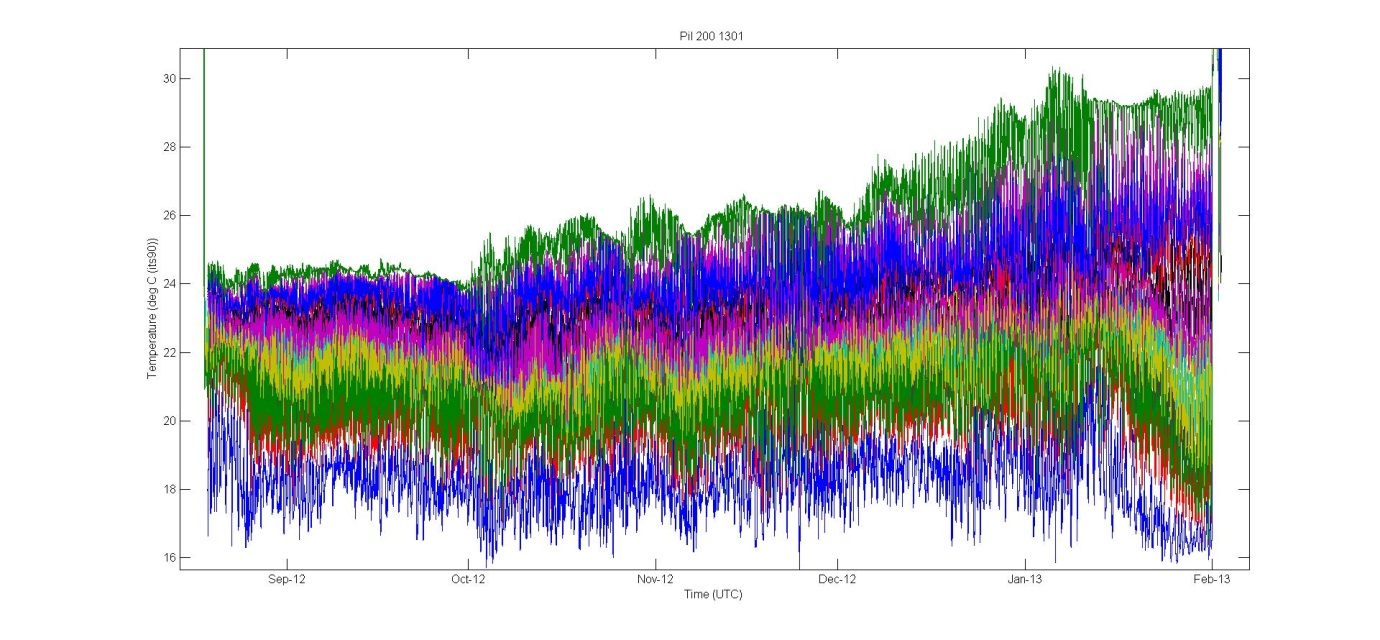
OGTECH *easyplot*

Feb 2014



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| --- | --- | --- |
| 2013-05 | Mederic MAINSON | Original version |
| 2014-02 | Simon Spagnol | Utilize IMOS parser routines |
|  |  |  |

Introduction.

The aim of *easyplot* is to deliver a simple to use program to plot and compare every instrument data.  
The idea is not only being able to plot on instrument data, but also to compare instrument between them allowing a more accurate diagnostic. The original scripts written by   
To do so, we take 3 different steps:

* Importing various data file into Matlab workspace
* Plot Matlab workspace
* Edit plot

Ps: I write those scripts on my spare time, so please be indulgent. They have to and will be improved but for the moment are a bit messy and very simple. The benefit of this is probably that they are really easy to understand and will make it easy to get familiar with Matlab.

# Get MATLAB

Hurrah guys, here is the download link, I suggest you install asap on your machine:

Login Information   
User ID:  [j.luetchford@aims.gov.au](mailto:j.luetchford@aims.gov.au)   
Temporary Password:  M2rYulA2

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# Prepare data file

Most raw instrument data will require conversion/ouput in order for the IMOS routines to read them (the one exception is the RDI 000 file). Table 1 is the description on how output variable should be setup. Using the IMOS routines means output order of variables in the file is not crucial, but some variables must be included in the output.

|  |  |  |
| --- | --- | --- |
| Instrument | Data file type expected | Example output variables, bold variables must be included in output |
| SBE16plus, CTDSBE19plus, CTDSBE25plus | .cnv | 'Conductivity' 'Pressure' 'Temp' **'time elapsed in second'** 'Flag' |
| SBE37 | .cnv | 'Pressure', 'Temp', 'Conductivity' **'time elapsed in second'**, 'Flag' |
| SBE39 | .asc |  |
| SBE56 | .cnv | %setting for export are: file type: .cnv  %date format: julian days,  %miscelleanous: output informational header. |
| WQM | .dat | WQM processed file setup:  WQM header  SN  Date  Time  Temperature  Salinity  DO(ml/l)  Chl user coef  NTU |
| TR1060 | .txt | Use Ruskin v1.7.19 or later, open your dataset .Hex file. Right click on the dataset in the navigator window and export as Rtext using engineering format. |
| TDR2050 | .txt | Use Ruskin v1.7.19 or later, open your dataset .Hex file. Right click on the dataset in the navigator window and export as Rtext using engineering format. |
| RDI | 000 |  |
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Tableau 1 - expected format.

# Setting up easyplot for the first time

To run easyplot you will require the easyplot and imos-toolbox routines. An example layout of the files on your computer would be to create a folder (say C:\AIMS) and place the easyplot and imos-toolbox (latest version in use at AIMS is imos-toolbox-v2.3b-aims) folders in there.

On your first install of easyplot you will need to set some paths up, navigate into the easyplot folder and edit the file ‘setup\_easyplot.m’. Edit the variables ‘easyplotDir’ and ‘imos\_tb\_home’ to match your installation.

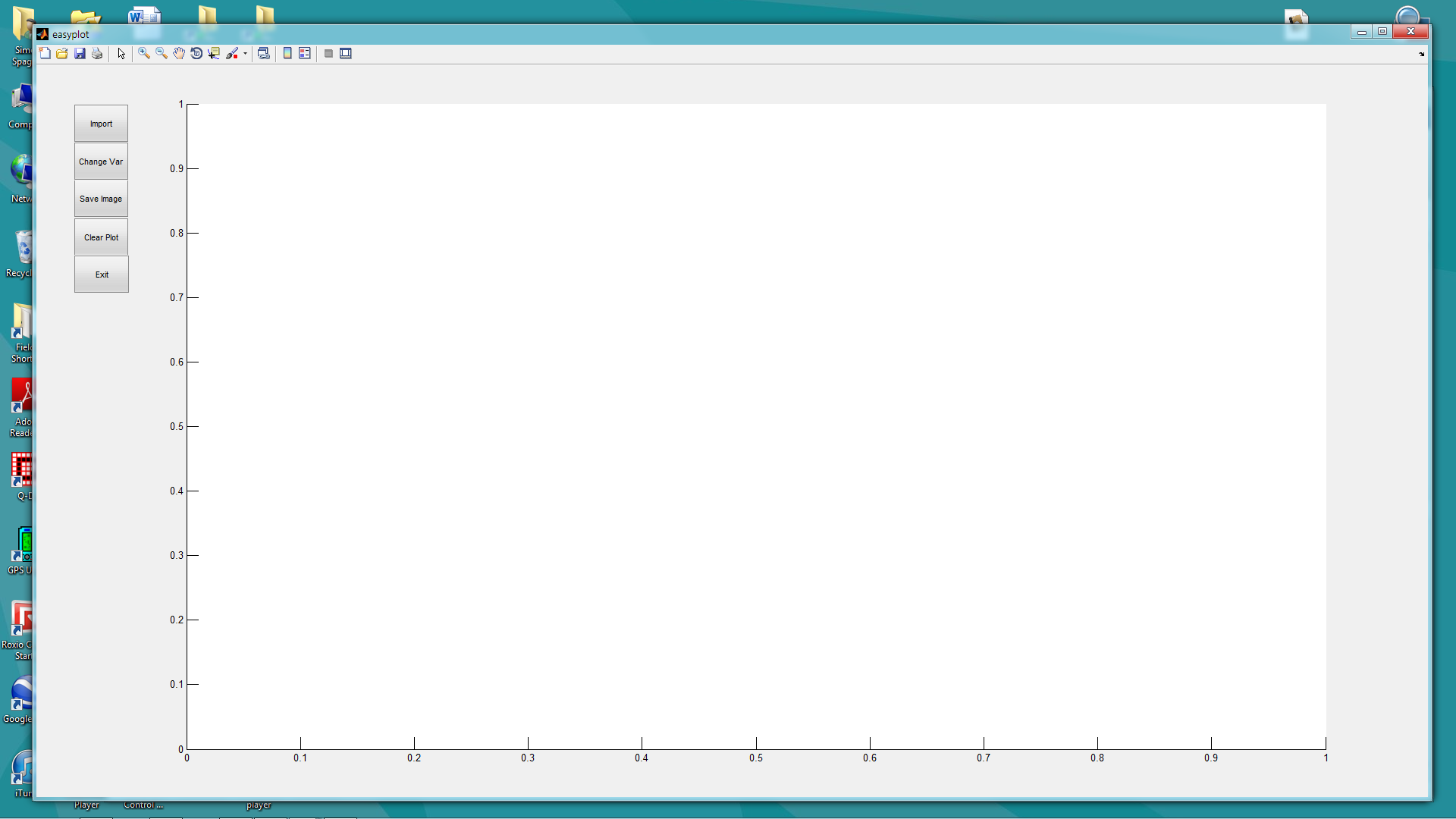
# Running easyplot

To setup the paths for easyplot you should only have to one of the following

* navigate to the easyplot folder and run setup\_easyplot from the command line, or
* open setup\_easyplot.m in the matlab editor and run it
* set ‘CURRENT FOLDER’ in matlab to easyplot folder in the folder view pane, select setup\_easyplot.m and run it by pressing F9.

# Method 1

Execute easyplot. You will be presented with a display



You now have a choice of buttons

* Import: allows to choose particular instruments files and the variable to plot. You may add more plots to the display by using this button as well.
* Change Var: this will allow the user to change the variable being displayed for the instruments listed. Note if an instrument does not have to requested variable it is not shown.
* Save Image: save the current view to a png file.
* Clear Plot: removes all plots.
* Exit: exits easyplot.

# Method 2

## Importing Data file.

In Matlab, set your ‘CURRENT FOLDER’ to wherever you easyplot location. Run the routine ‘importInstruments.m’. You will be then asked to pick an instrument type, then a window will show up and ask to browse for your files. Rerunning this routine will allow you to load more instruments. This routine will load the data into a variable ‘sample\_data’ in the workspace window.

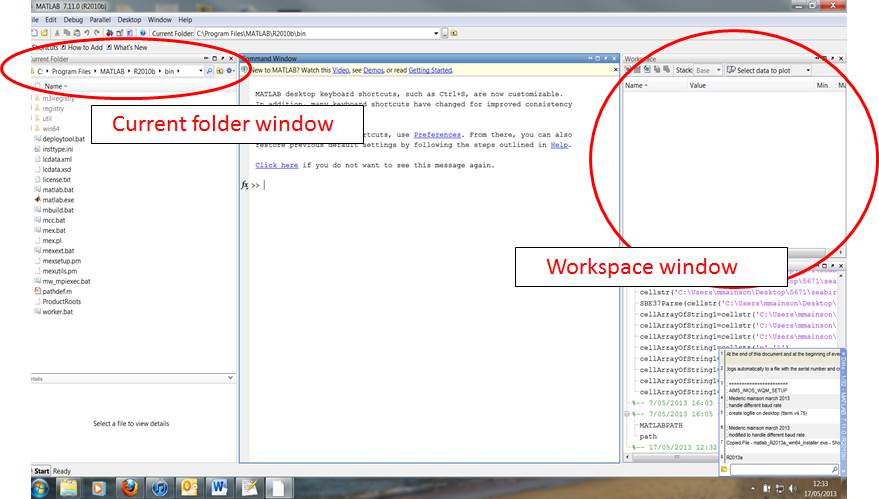
Then you’re ready for the next step  
  


Figure 1 - Default Matlab window

## Plot workspace variables

Simply select the plotWorkspaceUsingFilter function in the current folder windows and click F9. All-time series previously loaded shows up on a graph with time and legend.  
If you have too much too plot, it will be unreadable, luckily the next step is editing plot!

Note:

* If this generate an error, it’s probably because a system variable sneak into your workspace, Check all your variable are time series, if you find some that are not delete them and execute the plotWorkspaceUsingFilter function again.

# Editing plot

Here is where Matlab get handy by using its built in feature the ‘PLOT BROWSER’.  
In the figure window that just open, go onto the view tab and click ‘plot bowser’. You can then select easily show or hide the curve you like to see!!!

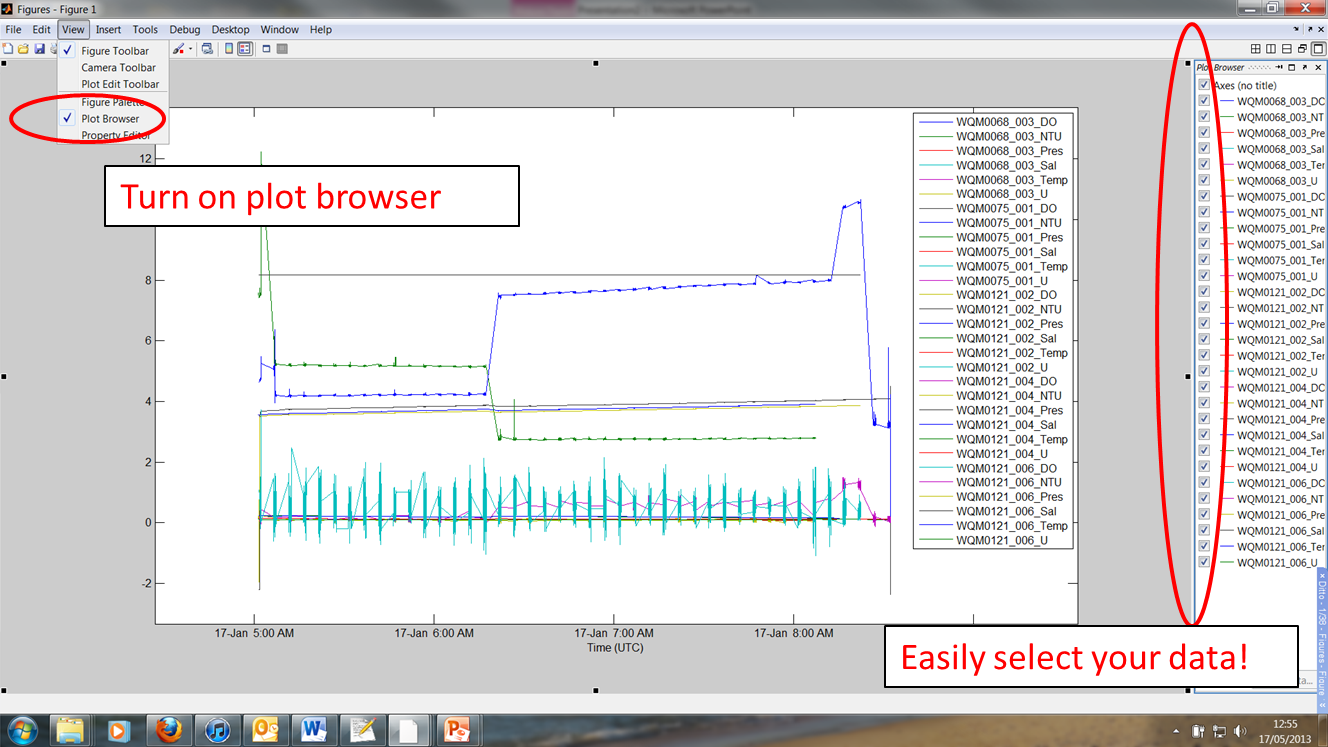


Figure 2 - Matlab figure window

Unfortunately, legend doesn’t update with the plot browser, so u can use the function ‘showSelectedLineSerieLegend’, select and click F9, then turn off the legend using the button ‘legend in the top ribbon of the figure window, and then turn it back on. The legend is up to date. I know it’s a bit clunky for the moment; I will work on it…

Another nice feature is the property editor, have a go at it….  
  
Conclusion

blah blah blah