

-UniGNUPlot- Versión 2.0.0B GNUPlot TK/TCL Front-End -DRAFT!!!

About this Doc: This document pretends to make easy the first user contact with UniGNUPlot, You are free to make additions or corrections but NEVER DELETING Parts.

History: When i was student, few years ago, i had (and already i have) to made some Math functions to plot, i was using the GNUPlot program to made quality plot's as i need, but... some guy told me: "The graphics are amazing! How can i do to make graphics like yours?" ... I asked his question but my friend was disapointed with my examples and retoric's about how easy is to make function plotting with GNUPlot...

For almost all the people in the world is more or less difficult to make graphics with GNUPlot, some simple graphics aren't; but labels, axis, coordinates, grids, etc. are really a hard job to do, indeed if you know how.

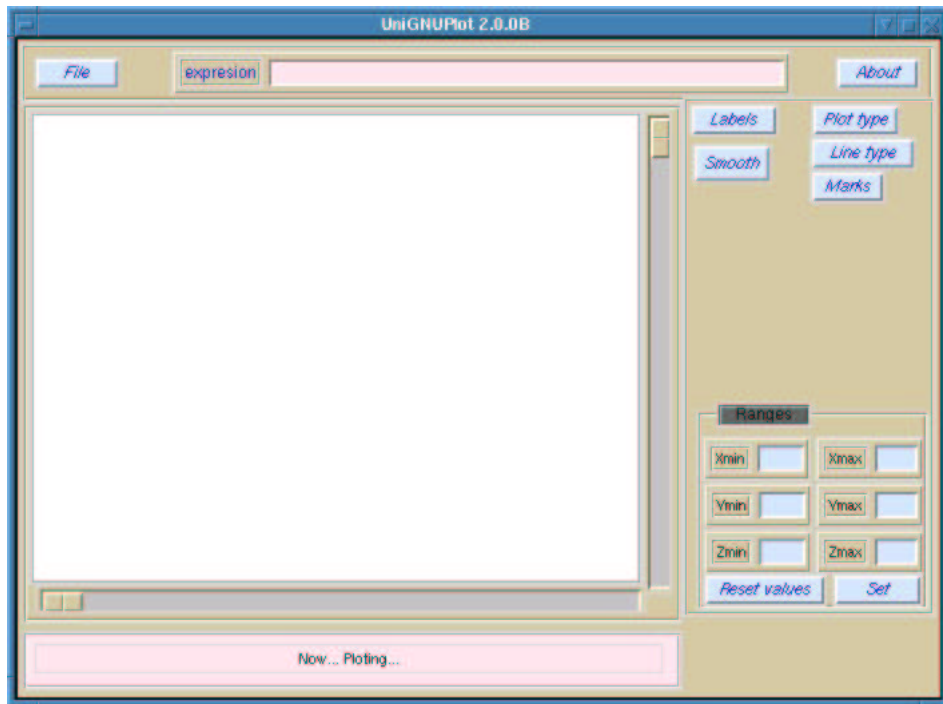
Why ? you may ask... The fantastic command-line editing in GNUPlot is very simple to use, but some commands to make improvements are so so larges, or more simple: You can't memorize all that commands, parameters and modifiers, so, if you can just press a button where you want, simple click on item, you will not take care about how GNUPlot do the hard job...

How ? Any button on UniGNUPlot scheme have associate a command line for GNUPlot, entry area will be inserted into variables, and thinks like that, when you press ENTER on the expresion box all the data colected as well the default actions -when a user don't ask for the option, but is needed by GNUPlot- will be send to GNUPlot. Then GNUPlot returns a graphic to be plotted on a "Canvas" space in UniGNUPlot.

So... What's the difference beetwen GNUPlot and UniGNUPlot ? GNUPlot is the principal tool or engine, without it UniGNUPlot can't work. UniGNUPlot it the tool who make's your live more easy with GNUPlot program, isn't finished, yet, but have a lot of improvements from it's original form.

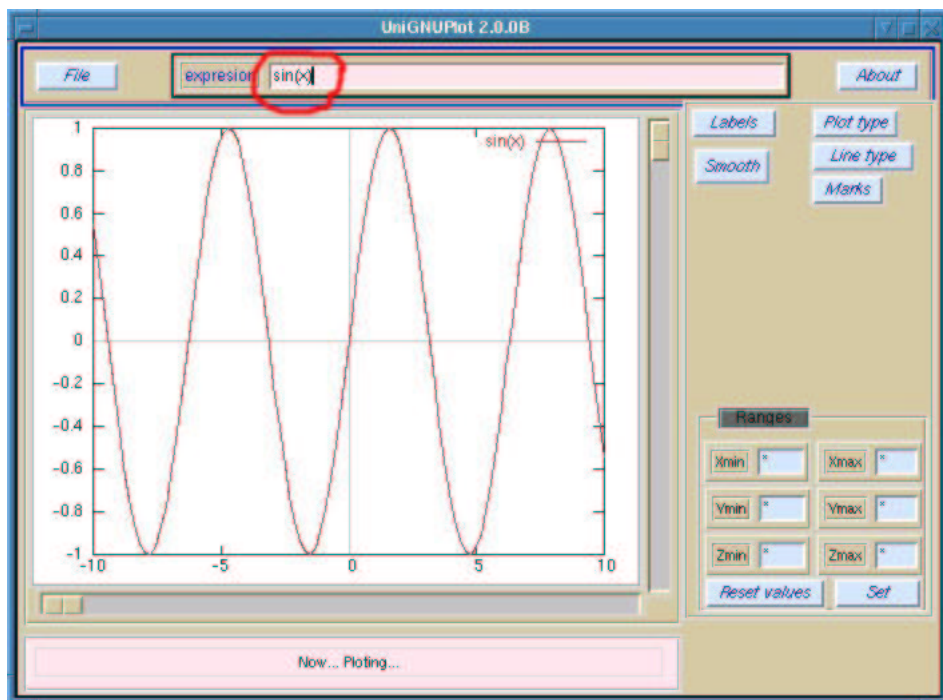
Requirements:

- Computer with Linux tested on DEBIAN 3.0 rc0 Kernel 2.4.19 Wish 8.0 or better GNUPlot Xwindows system tested with 4.1.0 The printer already working -optional if you want print the work
- How to use: At the first time you need to start UniGNUPlot, but afterall you may install the program...
- Installing the program:
 - 1)Get the software: <http://unicalculus.sourceforge.net>
 - 2)gunzip unignuplot-X.X.X.tar.gz (Where X's are the version control number)
 - 3)tar -xvf unignuplot-X.X.X.tar
- Executing the program: -Open an XTERM or what you want -what ever! -In xwindows ofcourse
- Now you have a new subdirectory named as: unignuplot/
- Enter it: \$ cd unignuplot
- Execute the program: ./unignuplot-2.0.0B.tcl
- Now you have a SCREEN like next:



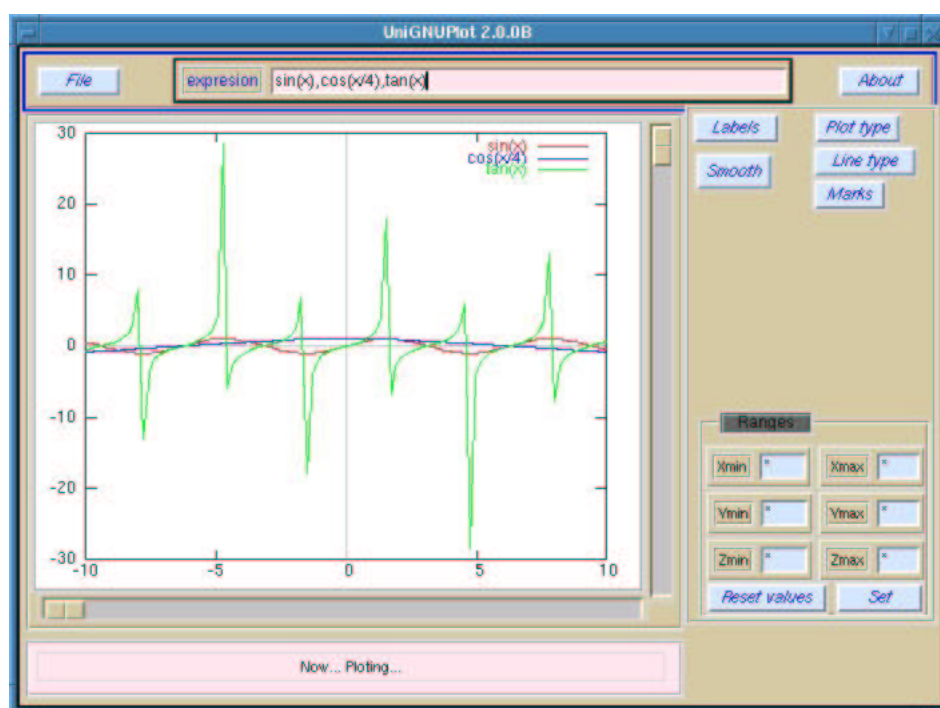
Organization of the screen and how to use.
In that part you, now are ready to use:

- Go to Expression Entry Frame and place your function to plot:



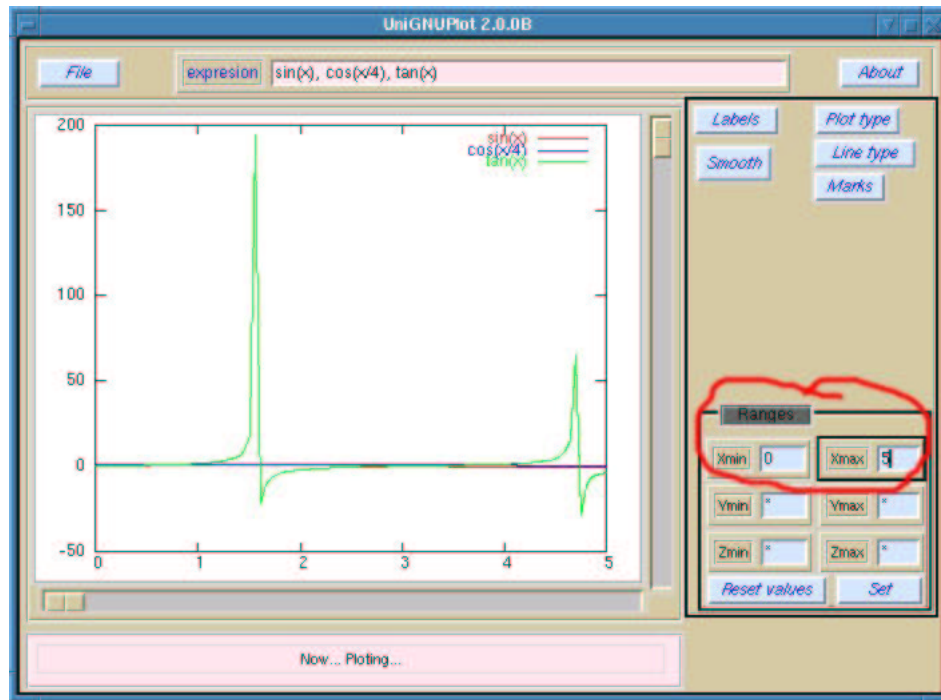
As you can see i put the function: $\sin(x)$ then i press the ENTER key and get the result as show below.

But some important plot's are made with more than one function, to plot more functions on a single graphic you can put the functions separated by commas:



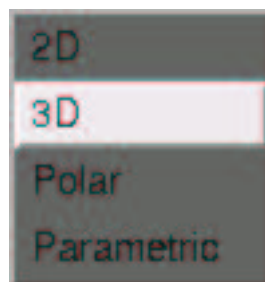
Below expresion: $\sin(x)$, $\cos(x/4)$, $\tan(x)$ then, again, press ENTER

But, what happens with ranges, ranges are usefull to select parts in the actual plot, for example, in the previous plot we whant only to show an special region -range- from the graphic, so you can put the values in the range area, from main screen. NOTE: take care about the values, you can specify any value, but if the ranges "out of the actual plot range" -in example (-10 to 10 over X axis: -30 to 30 over Y axis) auto range- the new plot image will show that part in most cases will be a blank screen.

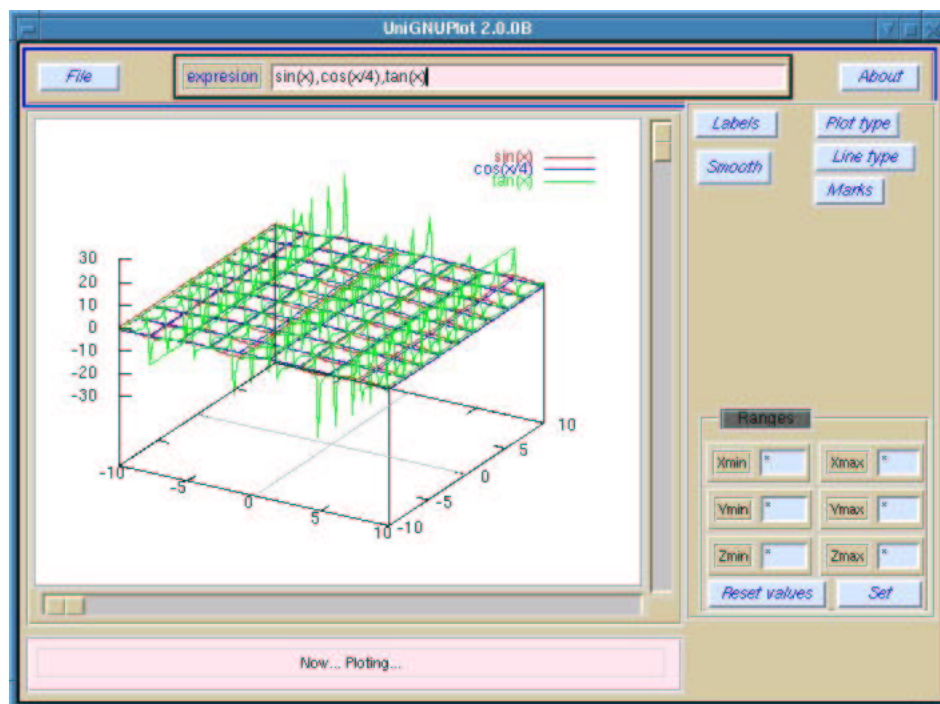


Here i put Ranges between x(0,5) and the Y Axis with no change, if you can return to the Auto-range mode just put on the desired value an * (asterisc) then press the SET button in the Ranges-Frame box.

Now you have a nice graphic for your school or the office, but, it's still in 2D Plot type, if you want a 3D plot graphic you must go to the "Plot Type" Main screen Button press it an you can choose the 3D option

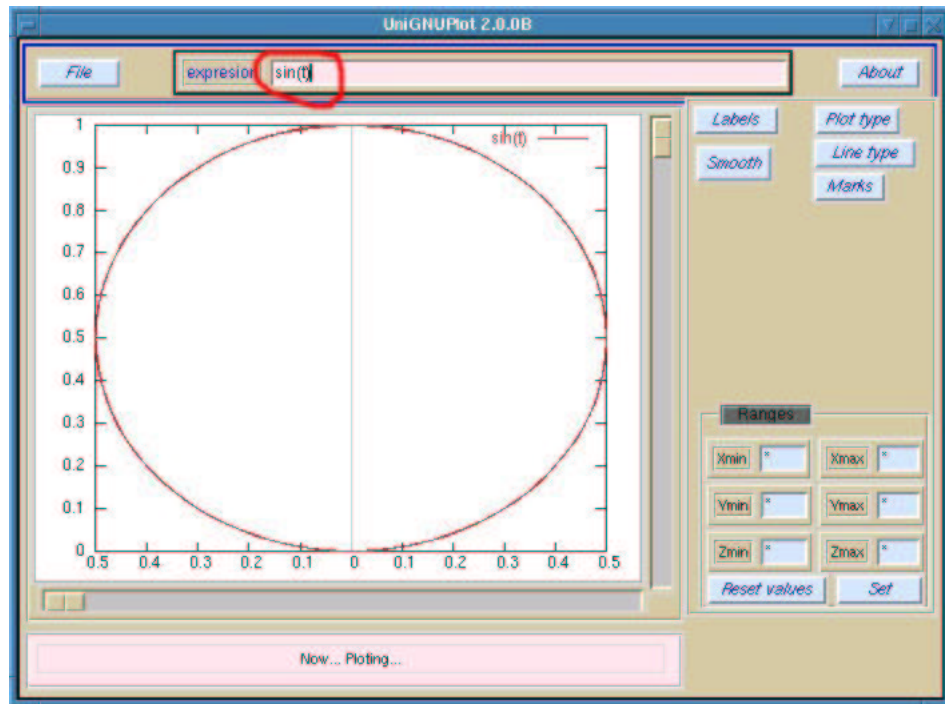


With tha you can see the same graphic but in 3D, and pressing again ENTER key over expression:

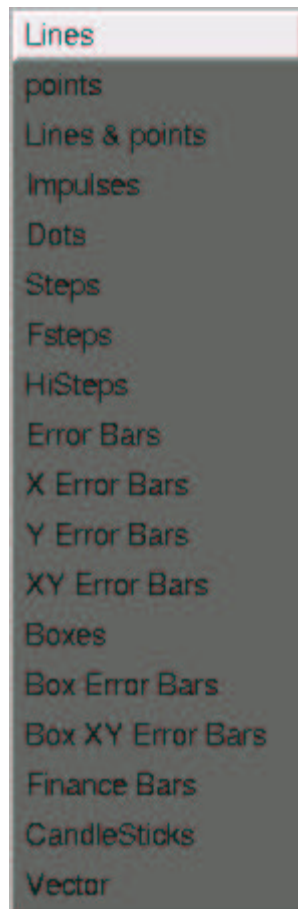


Ranges are used too in this kind of graphics.

If you want to plot a polar function or data, you must select, from the main screen the button labeled as Plot Type -as you do in the pass- But now select Polar, the procedure is the same as the previous 2D or 3D but now the functions -if you are using functions- are passed not in "x" terms, now all expressions will be passed as "t" terms, and will be displayed in 2D format automatically.

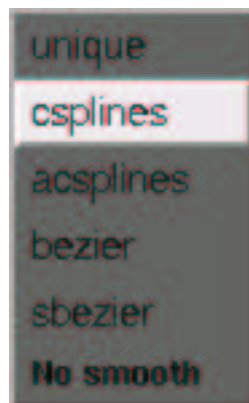


If you want to change the line type of your plot you must press the "line type" at the main screen and you can see the possible line type, at the time only the first plot will be changed by this option

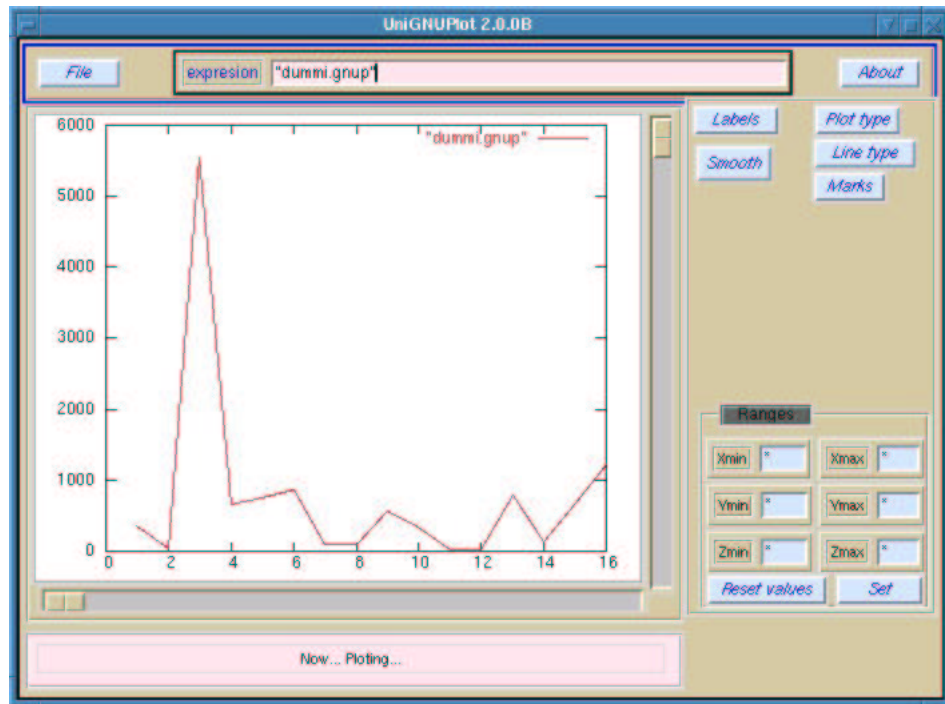


For me lines are the best, but it depend on the data type.

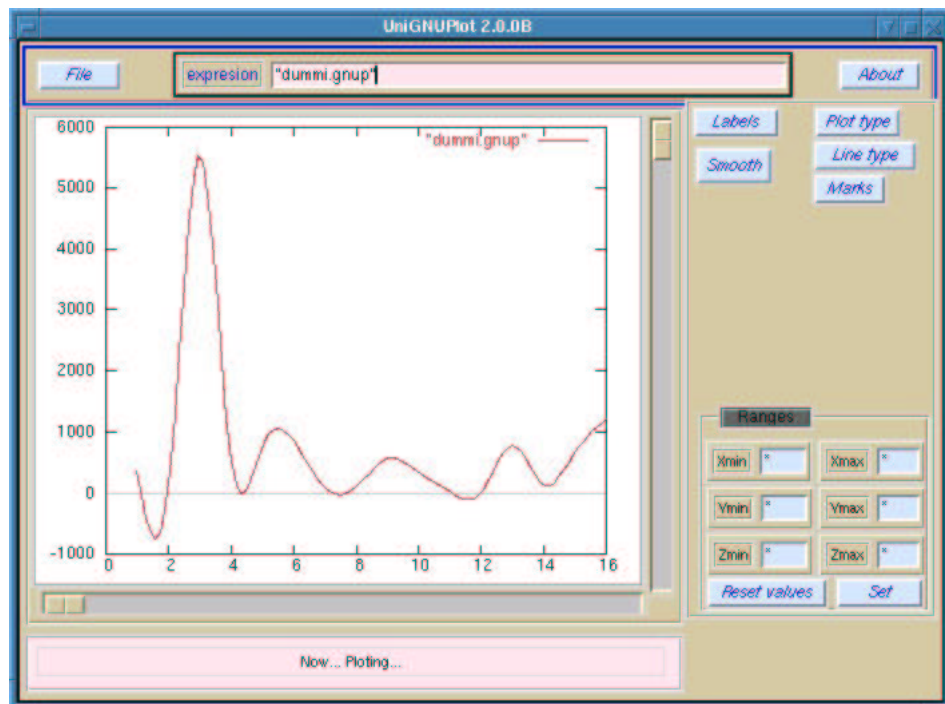
If you want smooth your plot -very usefull when you are plotting "data" not functions- you can select, from the main screen the option "smooth" and a list of options will be displayed as:



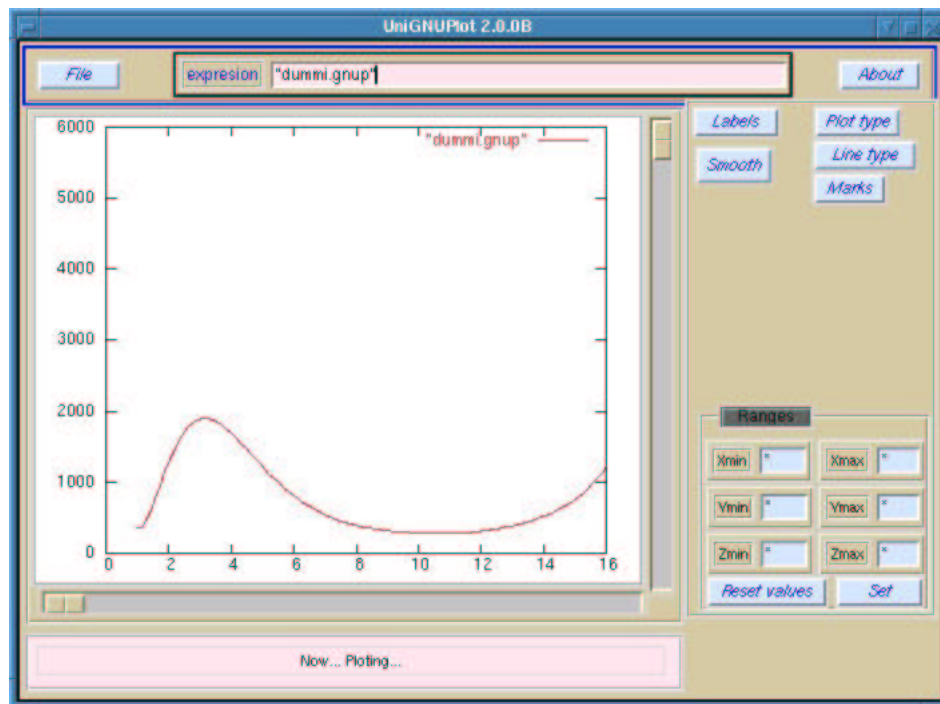
Example: I have a file called "dummi.gnup" with a particular data set and plot it:



The plot it's fine but if i want reduce the edged parts, i select csplines and the new plot looks like:



And the plot will look like next with smooth-bezier (a bezier curve):



You can experiment with your plot, data and smooth type, as you need in the final graph, at this point now you know how to plot data: Just place the name of the "data file" in the expression box enclosed with Quotes. And mix do the same with several data files, separated by commas.

But, how can I put the labels inside the plot, well, it's no difficult, but first; I divide the labeling into two groups:

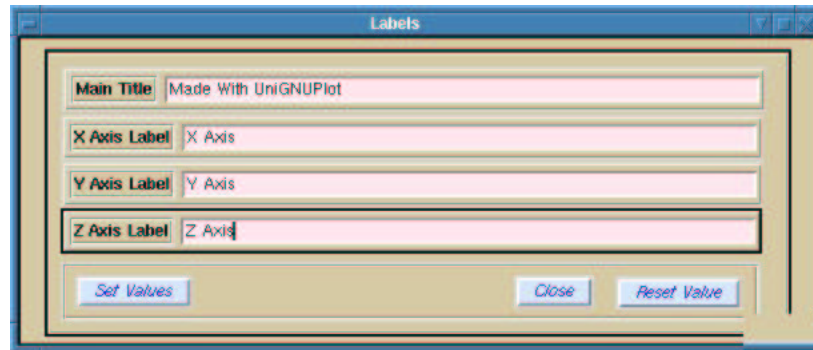
1. General labeling
2. Especial labeling -free label-

The general labeling has four labels:

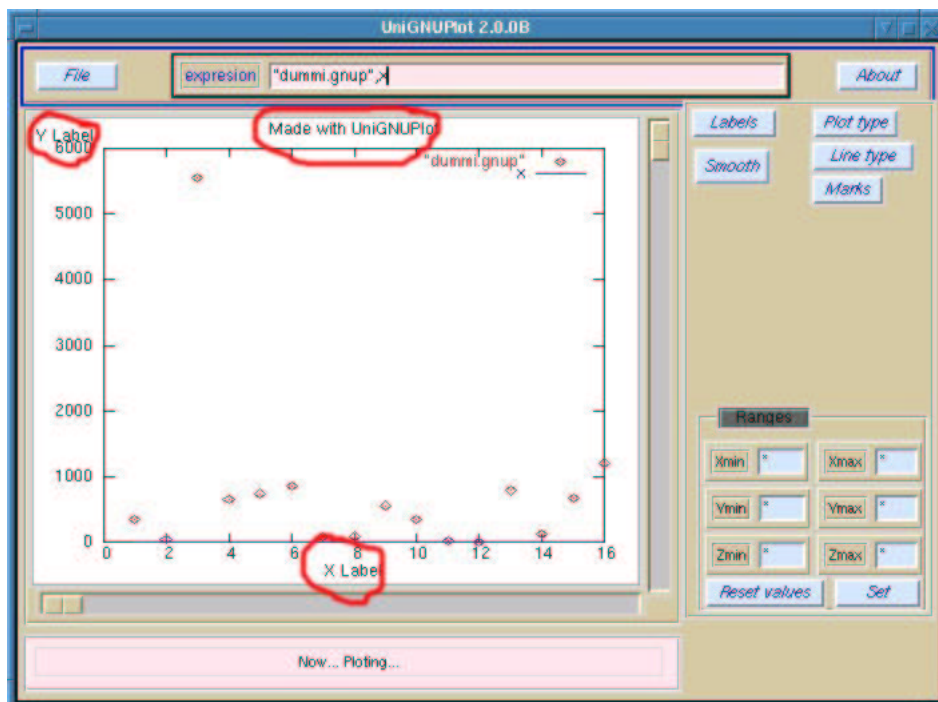
- Title
- X Axis Label
- Y Axis Label
- Z Axis Label

As show:

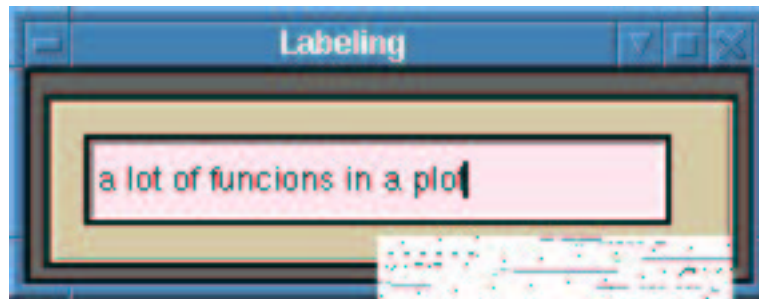
Fill free to fill with the desired text, but the labels will appear in specific areas inside the plot



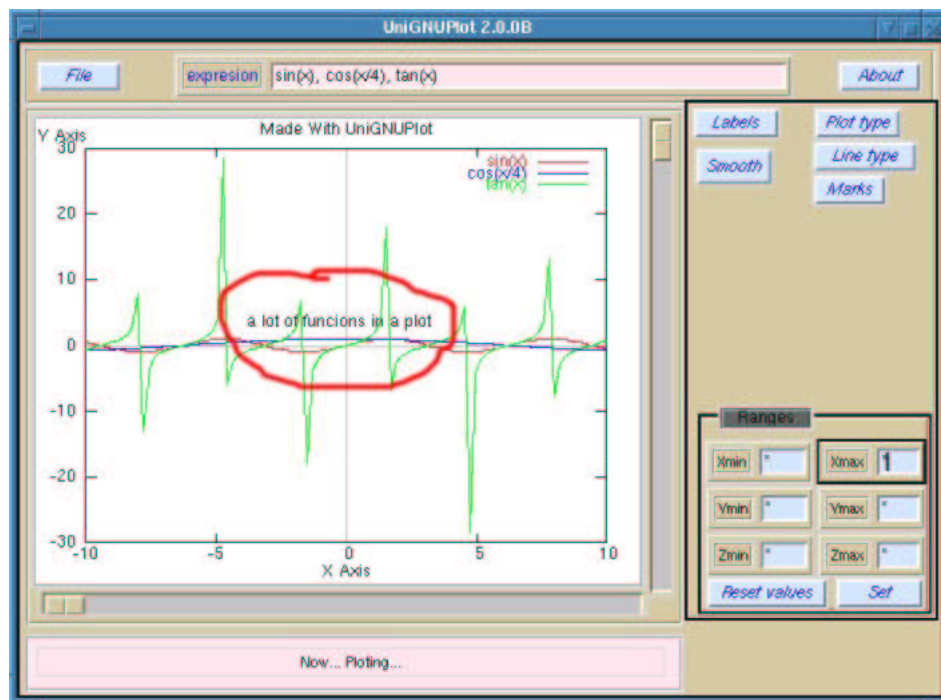
Press the button labeled "Set Values", automatically the labels will appear in the plot area but the Label window will not disappear, that option may be implemented in the future, but it's more usefull to see if the label text are correct before close. To close you only need press the "Close" Button; If you are not happy with your label set, press the "Reset value" and all the fields on the label window will be cleared.



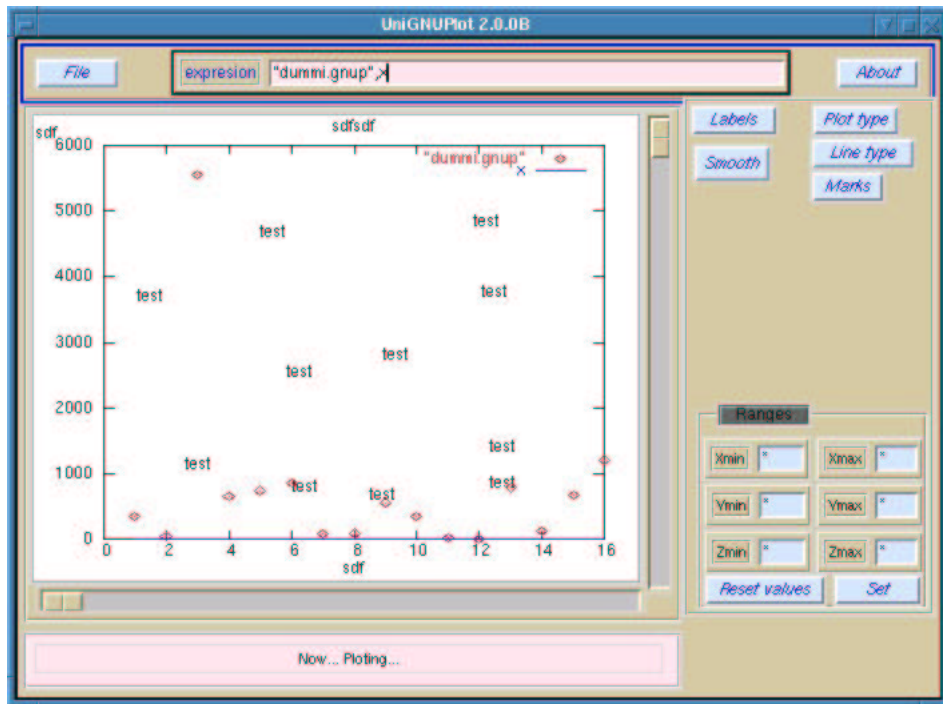
With the free labeling you can selecte any part of the plot area, the double click on the desired area tn fill the label text in the entry box:



Press enter and the label will appear automatically on the double click area:



You can put a lot of text in your graphic but be ware because if you change the ranges the labels will stay on the same place.



If you want to remove the free labels you need click the Right Mouse button inside the plot area, all the free labels will disappear, but only the free labels not the main labels.