XMGrace

Fancy characters and stuff

In XMGrace it is possible to write Greek letters, do superscripts and subscripts and the like. This tex-file/PDF will hopefully keep a list of what I have learnt (starting from: http://blog.louic.nl/?p=249).

Also check (from Googling 'xmgrace greek character list'):

http://agendafisica.wordpress.com/2010/12/01/grace-typesetting-for-titles-legends-tick-marks/

Greek Characters

For Greek characters (for example, sigma):

```
\f{Symbol}s\f{}
```

or

```
\x s\f{}
```

Note that you need a capital 'S' on Symbol! The \f{} returns the original font. For different characters after the {Symbol} part you get different output as described in the table below:

a	α	A	A
b	β	B	B
c	χ	C	X
d	δ	D	Δ
e	ϵ	E	E
f	ϕ	F	Φ
g	γ	G	Γ
h	η	H	H
i	ι	I	I
j	φ	J	ϑ
k	κ	K	K
l	λ	L	Λ
m	μ	M	M
n	ν	N	N
o	o	O	O
p	π	P	Π
q	θ	Q	Θ
r	ρ	R	P
s	σ	S	Σ
t	τ	T	T
u	υ	U	Y
v	ϖ	V	ς
w	ω	W	Ω
x	ξ	X	Ξ
y	ψ	Y	Ψ
z	ζ	Z	Z

Table 1: Different Greek characters available in XMGrace

Superscripts

For example x^2 is:

```
x\S2\N
```

Note that the capital 'S' makes it a superscript. The \N returns the text to the default state

Subscripts

For example a_b is:

```
a\sb\N
```

Note that the lower case 'S' makes it a subscript. The \N returns the text to the default state

Overlines

Overlines are created in the following way:

```
\oA\O
```

This would give: $\overline{A}$ as an output

Rotations

To rotate the next set of elements by x degrees anticlockwise relative to the current orientation (note that the effect is cumulative):

```
\r{x} rotated font
```

to return to normal:

```
\r{-x}
```

Slanting

To slant (to the right) by a factor of x (slant back to the left by -x to cancel):

```
\l{x}
```

Vertical Shift

To vertically shift by x units (note that 1 appears to be roughly double line spacing):

```
\v{x}
```

Horizontal Shift

To horizontally shift by x units:

```
\h{x}
```

Underlines

To begin and end an underling, use:

```
\u asd\U
```

To get: <u>asd</u>

Italics

```
\q italics\Q NOT
```

Gives: "*italics* NOT". Note that this is equivalent to slanting by 0.25 (e.g. \l{0.25})

Colours

```
\R{colourname}
```

Gives a colour of the type 'colourname'. Suitable colournames include (note no capitalisation): red, blue, yellow, green, cyan, brown, grey, violet, magenta, orange, green4, indigo, maroon, turquoise.

Font Size

Increase or decrease font size using:

```
\+ \−
```

Where \+ increases font size and \- decreases font size. Note that \N returns the text to the default state

Curly Font

To use a *curly font* try (note, if your system doesn't have the URW Chancery L font, this will do nothing):

```
\f{URWChanceryL−MediumItalic}
```

to leave this font type use $\backslash f\{\}$

Other Useful Characters

For interest's sake: '\x' puts you into symbol font (the same as '\f{Symbol}') and '\c' enters you into the upper 128 characters of a set while '\C' removes you from it. Note to put yourself back in the default font just type '\f{}'.

\x\c"\C	$\prime$
\x\c%\C	∞
\x\cˆ\C	$\Rightarrow$
\x\c.\C	$\rightarrow$
\x\c1\C	$\pm$
\x\c3\C	$\geq$
\x\c6\C	∂
\x\c9\C	$\neq$
\x\ce\C	$\sum$
\x\cr\C	$\int$
\x\cQ\C	∇
\x\cU\C	$\prod$
\x\cO\C	$\notin$
\x\c;\C	$\approx$
\x\cB\C	Real Part
\x\cA\C	Im Part
\x\c#\C	$\leq$
\x\cN\C	$\in$
\x "\C	$\forall$
\c 0\C	$^\circ$
\x\ca\C	$\langle$
\x\cq\C	$\rangle$
\f{ZapfDingbats}=	†

Table 2: Useful characters available in XMGrace

Note, there may be issues with spaces turning into Euro symbols if you are still in the '\c' environment.

Fractions

Not a nice thing, but by playing around with the horizontal and vertical placement of what you've got and adding in some underscores you cen jerry rig a fraction:

```
1  \+\v{0.7}1\v{-0.3}\h{-0.7}_\v{-1.1}\h{-0.7}3\N
```

This gives $\frac{1}{3}$. Note that for longer numbers you'll have to adjust the number of underscores and horizontal placement.

PRINTING PDFs

It is possible to adjust the page size in 'View'→'Page Setup' using the 'Orientation' and 'Size' options.

Once an appropriate size has been chosen (note: Letter will do!), go to 'Plot'→'Graph Appearance' and change options in 'Viewport' (i.e. *Xmin, Xmax, Ymin, Ymax*) - I have used the values 0.08, 1.39, 0.09, 0.98 (respectively) as these remove whitespace effectively.

It is worth noting that having scaled up the graph size, the fonts seem a little small so it may be useful to increase text size (this would then require changing the 'Viewport' values again).

Export this as a postcript (.ps) file then *ps2pdf* it. Be aware that if Greek characters (or other characters perhaps) are included in the graph then *ps2pdf* may have trouble printing them so you need to add the following flags: -dPDFSETTINGS=/printer -dAutoRotatePages=/All

NOTE: it is not necessary to crop the graphs manually, one can also export them as .ps, then convert to pdf and use the *pdfcrop* command line function.

1 Graph-ception

To make a sub-graph (i.e. inset), first have the original graph you want to include the inset with. Then go: *Data* ≫ *Import* ≫ *ASCII* (as usual) to bring up the *Read Sets* menu. In the section *Read To Graph*, right click in the scroll box and select the option *Create new*, this now enables a second graph to be created and have data read into it. Then going to *Edit* ≫ *Arrage Graphs* to bring up the menu that lets you adjust the *Page Offsets* of each graph to make it fit in the right place.

In order to edit a graph make sure that the correct graph is selected from *Edit* ≫ *Arrange Graphs* (i.e. the corners have black squares on them).

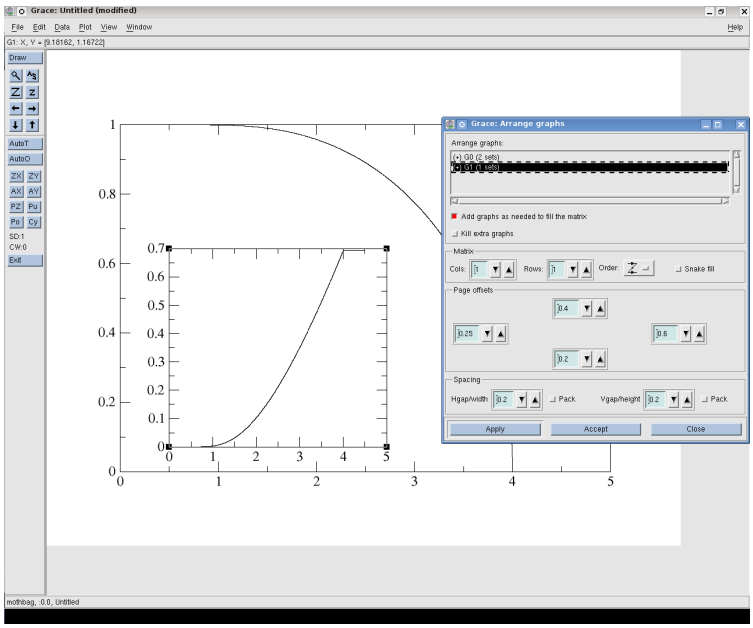

Figure 1: The *Arrange Graphs* menu with the *Page Offsets* options set to produce an inset