



*Tutorials and worked examples for simulation,
curve fitting, statistical analysis, and plotting.*
<http://www.simfit.org.uk>

PostScript specials

SIMFIT PostScript files are designed to facilitate editing, and one important type of editing is to be able to specify text files, known as specials, that can modify the graph in an almost unlimited number of ways. This technique will now be described but, if you want to do it and you are not a PostScript programmer do not even think about it; get somebody who has the necessary skill to do what you want. Further details are given next followed by examples showing how to display a logo.

What specials can do

First of all, here are some examples of things you may wish to do with SIMFIT PostScript files that would require specials.

- Replace the 35 standard fonts by special user-defined fonts.
- Add a logo to plots, e.g. a departmental heading for slides.
- Redefine the plotting symbols, line types, colors, fill styles, etc.
- Add new features, e.g. outline or shadowed fonts, or clipping to non-rectangular shapes.

When SIMFIT PostScript files are created, a header subsection, called a prologue, is placed at the head of the file which contains all the definitions required to create the SIMFIT dictionary. Specials can be added, as independent text files, to the files after these headings in order to re-define any existing functions, or even add new PostScript plotting instructions. The idea is very simple; you can just modify the existing SIMFIT dictionary, or even be ambitious and add completely new and arbitrary graphical objects.

The technique for defining specials

Any SIMFIT PostScript file can be taken into a text editor in order to delete the existing header in order to save space in a large document, as done with the SIMFIT manual, or else to paste in a special. However, this can also be done interactively by using the font option, accessible from the SIMFIT PostScript interface. Since this mechanism is so powerful, and could easily lead to the PostScript graphics being permanently disabled by an incorrectly formatted special, SIMFIT always assumes that no specials are installed. If you want to use a special, then you simply install the special and it will be active until it is de-selected or replaced by another special. Further details will be found in the on-line documentation and `w_readme` files, and examples of specials are distributed with the SIMFIT package to illustrate the technique. You should observe the effect of the example specials before creating your own. Note that any files created with specials can easily be restored to the default configuration by cutting out the special. So it makes sense to format your specials like the SIMFIT example specials `pspecial.1`, etc. to facilitate such retrospective editing. The use of specials is controlled by the file `pspecial.cfg` as now described. The first ten lines are Booleans indicating which of files 1 through 10 are to be included. The next ten lines are the file names containing the special code. There are ten SIMFIT examples supplied, and it is suggested that line 1 of your specials should be in the style of these examples. You simply edit the file names in `pspecial.cfg` to install your own specials. The Booleans can be edited interactively from the advanced graphics PS/Fonts option. Note that any specials currently installed are flagged by the SIMFIT program manager and specials only work in advanced graphics mode. In the event of problems with PostScript printing caused by specials, just delete `pspecial.cfg`. To summarise.

- Create the special you want to insert.
- Edit the file `pspecial.cfg` in the SIMFIT folder.
- Attach the special using the Postscript Font option.

Example codes for PostScript specials

To clarify the structure of SIMFIT PostScript specials, just consider the code for the first three examples distributed with the SIMFIT package. The file `pspecial.1` simply adds a monochrome logo, the file `pspecial.2` shows how to add color, while the file `pspecial.3` makes more sweeping changes to the color scheme by reversing the definitions for black and white.

□ The PostScript special `pspecial.1`

```
%file = pspecial.1: add monochrome simfit logo to plot
gsave
/printSIMFIT {0 0 moveto (SIMFIT) show} def
/Times-Italic findfont 300 scalefont setfont
300 4400 translate
.95 -.05 0
{setgray printSIMFIT -10 5 translate} for
1 1 1 setrgbcolor printSIMFIT
grestore
%end of pspecial.1
```

□ The PostScript special `pspecial.2`

```
%file = pspecial.2: add yellow simfit logo to plot
gsave
/printSIMFIT {0 0 moveto (SIMFIT) show} def
/Times-Italic findfont 300 scalefont setfont
300 4400 translate
.95 -.05 0
{setgray printSIMFIT -10 5 translate} for
0 0 moveto (SIMFIT) true charpath gsave 1 1 0 setrgbcolor fill grestore
grestore
%end of pspecial.2
```

□ The PostScript special `pspecial.3`

```
%file = pspecial.3: yellow-logo/blue-background/swap-black-and-white
/background{.5 .5 1 setrgbcolor}def
background
0 0 0 4790 6390 4790 6390 0 4 pf
/c0{1 1 1 setrgbcolor}def
/c15{0 0 0 setrgbcolor}def
/foreground{c0}def
gsave
/printSIMFIT {0 0 moveto (SIMFIT) show} def
/Times-Italic findfont 300 scalefont setfont
300 4400 translate
.95 -.05 0
{setgray printSIMFIT -10 5 translate} for
0 0 moveto (SIMFIT) true charpath gsave 1 1 0 setrgbcolor fill grestore
grestore
%end of pspecial.3
```

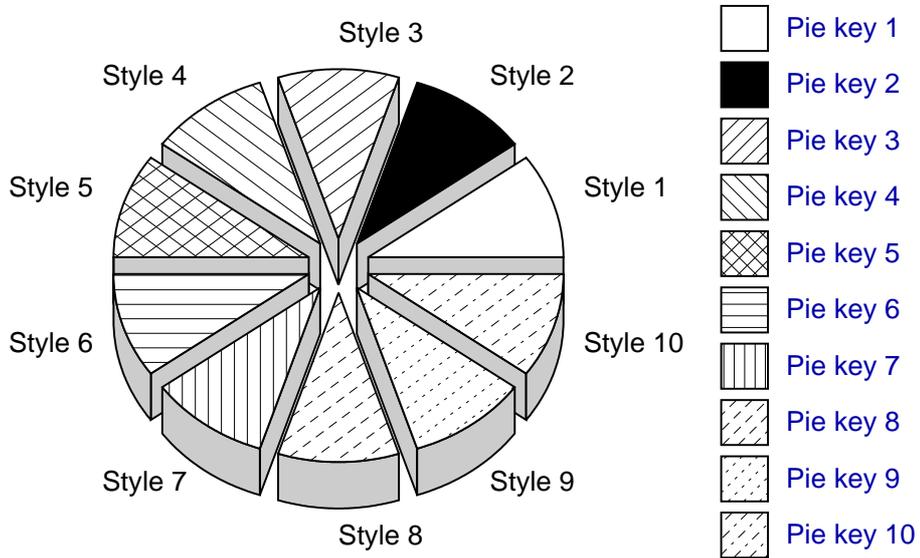
Remember, the effects of these specials are only visible in the PostScript files created by SIMFIT and not in any direct Windows quality hardcopy.

Example plots for PostScript specials

These figures illustrate the end result of adding logos using such PostScript specials.

SIMFIT

Pie Chart Fill Styles



SIMFIT

Perspective Effects In Bar Charts

