EXPLOT Users Guide

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Contents

General remarks

Explot is a simple general-purpose plot program. The input is a command language, similar to the plot commands used by many computer languages. The output is a PostScript file that may be sent to a printer or viewed at a console.

Usually the input is produced by a program (THALIA, DOMINO etc.), but occasionally it may be useful to edit the file. e.g. to add some labels or a title.

- The output of PTAX (GE0CALC) by Perkins, Berman and Brown may be used directly as input to EXPLOT. (NPLOIG is the default if the first word of the first line is not a key-word.)
- Each command consists of a key-word and data. The key-word must always be in the first six columns of an input line. The data is usually completely format-free.
- All text data may contain single blanks. The whole text must be separated with two blanks from the other input data.
- Subscripts and superscripts are coded in texts with a preceding _ and \^. (\ is \\). e.g. SiO_2 will be plotted as SiO_2. Al_2\^O_3 will be plotted as Al_2O_3. (with subscripts)
- The font may be switched to "Symbol" with a preceding \> and back to the normal font with \< e.g. \>m\< is plotted as mue (greek letter).

Input for EXPLOT

1. General definitions and parameters

NULLPT x0 y0
Sets the origin (0,0) of the drawing to x0 and y0 (in cm) (default: x0 = 5, y0 = 3)

RELNUL dx0 dy0
Shifts the origin (0,0) of the drawing by dx0 and dy0 (in cm)

FONT fontname
sets the font for text (default = Helvetica)

FAT lw
Sets the linewidth of lines in cm (default = 0.02)
PS: lw setlinewidth

STYLE dash1 gap1 dash2 gap2
Sets the style of lines (default:= 0,0,0,0 (solid line))
PS: [dash1 gap1 dash2 gap2] 0 dash

LGRAY lgray
Defines the gray-level of lines. (default = 0 (black))

FGRAY fgray
Defines the gray-level of filled figures. (default = 0 (black))

LCOLOR red green blue
Defines the colour of lines. (default = 0,0,0 (black))

FCOLOR red green blue
Defines the colour of filled figures. (default = 0,0,0 (black))

FERTIG
end drawing

2. Definitions and commands for X-Y plots

ACHSEN cod b h l r u o
Sets the drawing type to be an X-Y-plot (system=2) and defines the user units.
cod if cod=1, a rectangle is drawn
b width of plot. (default = 10)
h highth of plot (default = 10)
l minimum X-value (default = 0)
r maximum X-value (default = 10)
u minimum Y-value (default = 0)
o maximum Y-value (default = 10)

XAXIS text y1 side tik grs grz l1 l2 kurz lang c1 c2
YAXIS text x1 side tik grs grz l1 l2 kurz lang c1 c2
Draws an X-, or Y-axis with the user units defined in ACHSEN (only if drawing type is X-Y-plot).
text: label of axis
y1,x1: Y- or X-position of X- or Y-axis (in user units)
side=1: label for X-axis below, for Y-axis to the left
side=-1: label for X-axis above, for Y-axis to the right
tik: distance of tik-marks in cm.
grs: fontsize for label in cm
grz: fontsize for numbers in cm
l1: every l1'th tik-mark is a long one
l2: every l2'th tik-mark is labeled with the corresponding X- or Y-value.
kurz: length of short tik-marks
lang: length of long tik-marks
c1,c2: number of significant digits and decimals in numbers (similar to FORTRAN format)

AXIS f1 f2
xtext b xmin xmax
ytext h ymin ymax
Sets the drawing type to be an X-Y-plot (system=2), defines the user units and draws X- and Y-axes. The scale will be adjusted by the program.
fx,fy: approximate distance of labeled ticks for the X- and Y-axis.(in cm)
(if fi xtext: label for X-axis
b: width of plot
xmin: minimum X-value
xmax: maximum X-value
ytext: label for Y-axis
h: highth of plot
ymin: minimum Y-value
ymax: maximum Y-value

3. Definitions and commands for triangle plots

SEITE s

Sets the drawing type to be a triangle plot (system=3) and draws the triangle

s: side length of triangle side in cm. (default = 20)

ECKEN texta textb textc grs da

labels the corners of the triangle (only if drawing type is triangle plot)

texta: label for lower left corner
textb: label for lower right corner
textc: label for top corner
grs: size in cm for labels
da: distance in cm between triangle and label

ABC abc

defines the permutation of the koordinates (only if drawing type is triangle plot)

abc ='ABC', 'ACB', 'BAC', 'BCA', 'CAB' or 'CBA'..(default = 'ABC')

4. Standard drawing commands

TEXT text x y [z] grs xkor skor ykor theta

PSYM text x y [z] grs xkor skor ykor theta

draws a text in the plot.

TEXT: koordinates in user units
PSYM: koordinates in cm.

text: Text to be written
x,y: X- and Y- koordinates (if drawing type is X-Y-plot)
x,y,z: three concentrations (if drawing type is triangle plot)
grs: Fontsize in cm
xkor: text will be shifted by xkor*grs in X-direction
skor: text will be shifted by skor*(length of text) in X-direction
ykor: text will be shifted by ykor*grs in Y-direction
theta: text will be drawn at angle theta (deg)

LINIEN f1 f2 f3 f4

x1 y1 [z1] x2 y2 [z2] ... 999 999 [0]

draws a line segment.

f1: f1= 0: figure is outlined, f1=1: figure is filled, f1=2: figure is outlined and filled
f2: if not 0: line segment is closed (last point connected to first point)
f3: if not 0: line starts and ends at ymin.
f4: (not used)
xi,yi: X- and Y- koordinates of points.(if drawing type is X-Y-plot)
xi,yi,zi: concentrations (if drawing type is triangle plot)

PUNKTE sym grs

x1 y1 [z1] x2 y2 [z2] ... 999 999 [0]

draws points with a symbol.

sym: symbol (see figure)
grs: size of symbol in cm.
xi,yi: X- and Y- koordinates of points.(if drawing type is X-Y-plot)
xi,yi,zi: concentrations (if drawing type is triangle plot)

GITTER xgrid [ygrid]

draws a grid in the plot

X-Y-plot:
xgrid: distance of gridpoints in X-direction
ygrid: distance of gridpoints in Y-direction

triangle-plot:
xgrid: number of divisions on each side of the triangle

POLY x y [z] N rad theta

draws a regular polygon

x,y: X- and Y- koordinates of centre (if drawing type is X-Y-plot)
x,y,z: three concentrations of centre (if drawing type is triangle plot)
N: number of corners in polygon (N circle)
theta: angle of rotation of polygon

CLIP

clips the drawing outside the coordinates defined in ACHSEN or outside the triangle defined in SEITE

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5. Special drawing commands

TIELIN **f1**

x1 y1 [z1] x2 y2 [z2] ... 999 999 [0]

draws tielines (two points = one tieline)

f1: =0: only outline, =1: all tielines and outline
xi,yi: X- and Y- koordinates of points.(if drawing type is X-Y-plot)
xi,yi,zi: concentrations (if drawing type is triangle plot)

maximum : 500 pts = 250 tielines.

BINEX sym grs

text [DIS / BOX] fill x1 y1 x2 y2
text [DIS / BOX] fill x1 y1 x2 y2
...
ENDEX

draws e.g. experimental data with error-box or with displaced point

sym: symbol (see appendix)
grs: size of symbol in cm.
text: identifier for point
DIS: draws small symbol at (x1,y1) and larger symbol at (x2,y2)
BOX: draws a box with opposed corners (x1,y1) and (x2,y2)
fill: 0: open symbol 1: filled symbol

NPLOIG

xtext (A80)
ytext (A(80)
ipltr xmin xmax ymin ymax b h ispeed iaxcol (I1,F9.4,5F10.4,2I3
| numlbl npoint npl isymb icolpt icollb (6I5)
| xi yi IPi (i=1,npoint) (7(2F10.4,I2)
| xposi yposi sizlabi angei nchari labeli (i=1,numlbl) (2F10.4,F10.7,F10.4,I5,A80)
... (repeat above block for each line)
(**blank line**)

draws a diagram with the output from TWQ (and DOMINO, THALIA etc.)
if the first line of the input file is not a known keyword, then NPLOIG is assumed.

if xtext bgins with "L:", the x and y are in long format: (0PE20.12) instead of F10.4

xtext: label of x-axis
ytext: label of y-axis (if xtext and ytext are blank, no axis are drawn)
ipltr: (not used by EXPLOT)
xmin: minimum X-value
xmax: maximum X-value
ymin: minimum Y-value
ymax: maximum Y-value
b: width of plot
h: highth of plot
ispeed, iaxcol: (not used by EXPLOT)

numlbl: number of labels
npoint: number of points
npl: a symbol is drawn each npl points
isymb: symbol (if =0, no symbol is drawn)
icolpt, icollb: (not used by EXPLOT)
xi,yi: coordinates of points
IPi: =2: point is connected with a line, =3: point is not connected (new line segment)
xposi, yposi: coordinates of label
sizlabi: size of label
angei: angel of label (tan(α) in user units)
nchari: number of characters in label (ignored by EXPLOT, may be any number)
labeli: label up to 80 characters

HISTO cod anf delta num

y1 y2 y3 y4 ... ynum

draws a histogram (only if drawing type is X-Y-plot)

cod: = 0: line, =1: outline, =2: histogram
anf: lowest X-value
delta: interval width
num: number of intervals
yi: Y-values (frequencies)

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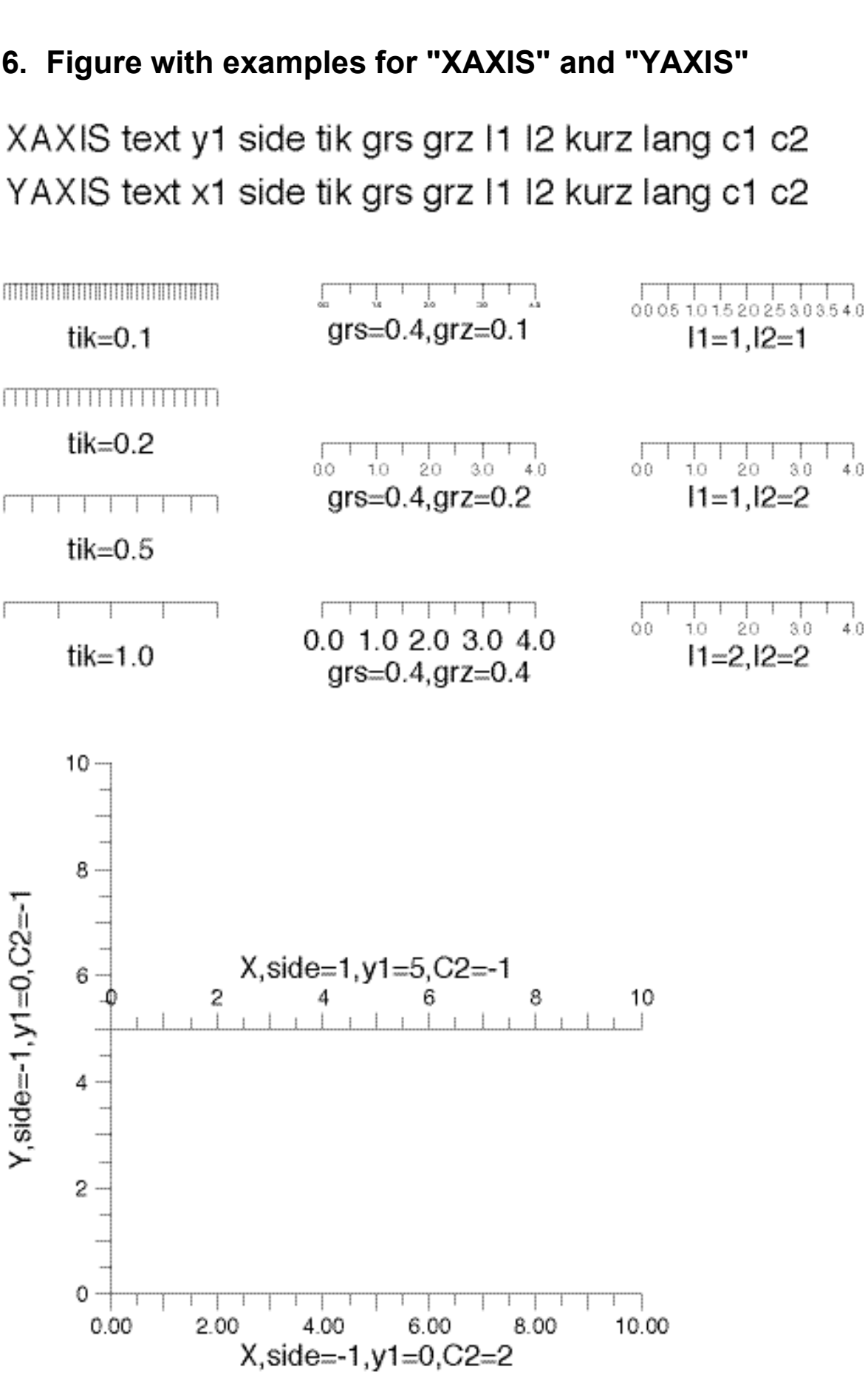
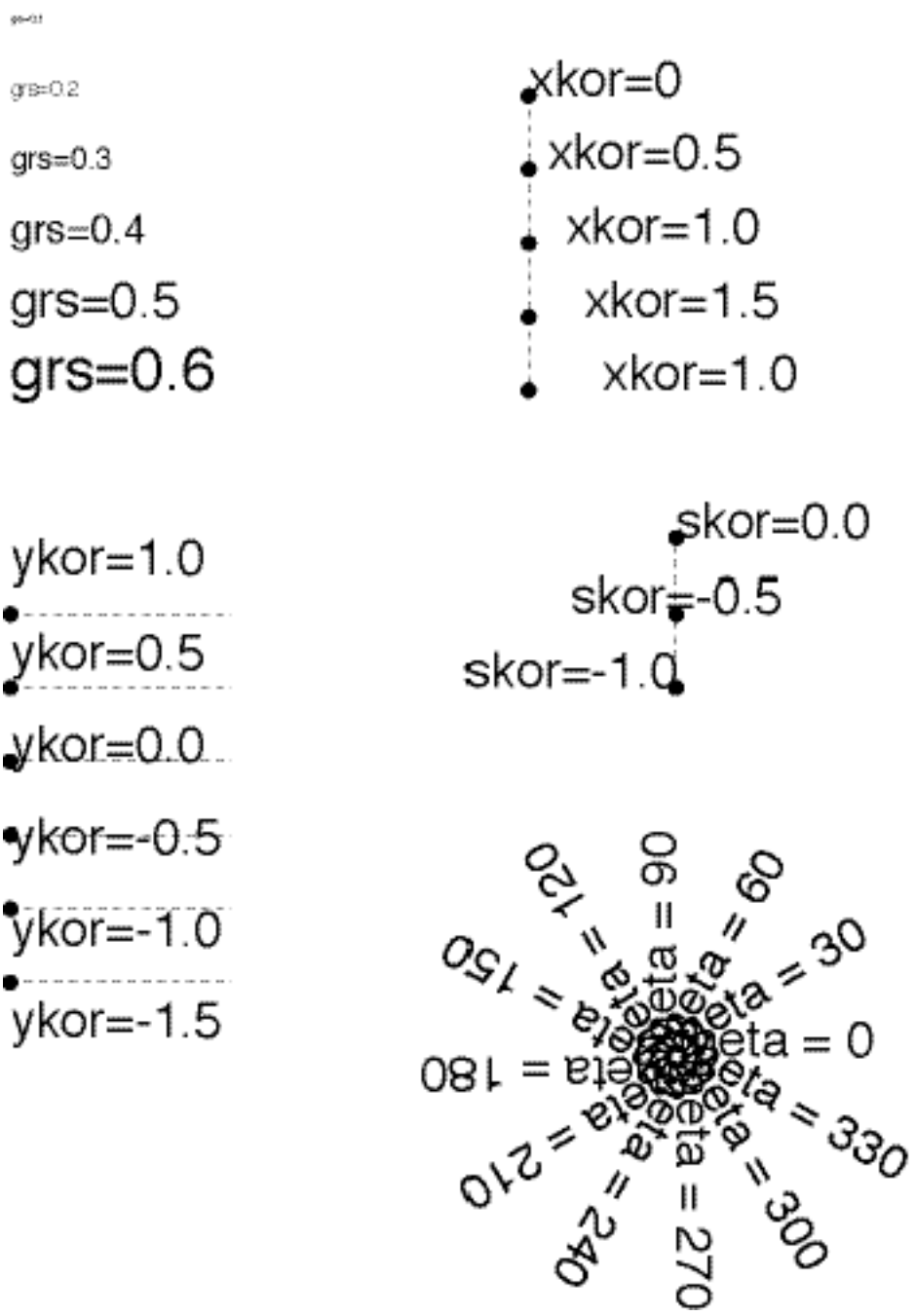
6. Figure with examples for "XAXIS" and "YAXIS"



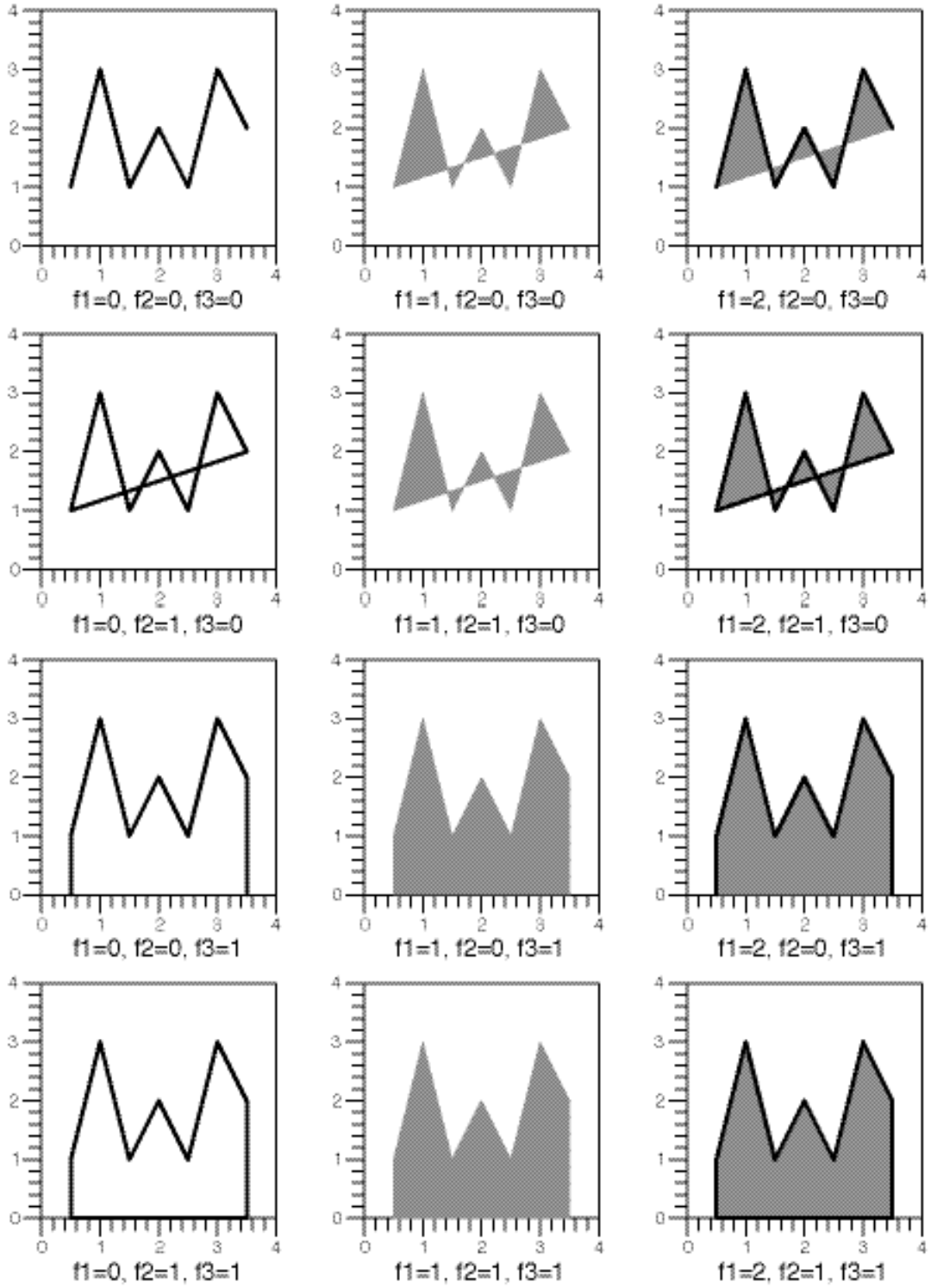
7. Figure with examples for "TEXT" and "PSYM"

TEXT text x y [z] grs xkor skor ykor theta
PSYM text x y [z] grs xkor skor ykor theta



8. Figure with examples of "LINIEN"

LINIEN f1 f2 f3 f4 x1 y1 [z1] x2 y2 [z2] ... 999 999 [0]



9. Figure with Symbols for EXPLOT