Subject: Re: Contour plots on xz and yz surfaces
Posted by Kenneth P. Bowman on Tue, 13 Jun 2000 07:00:00 GMT
View Forum Message <> Reply to Message

In article <13062000115105052 4%k-bowman@null.tamu.edu>, K. Bowman
<k-bowman@null.tamu.edu> wrote:

> I'm looking for something like the library routine PLOT_3DBOX to draw
> multiple contour plots on the inside surfaces of a box. In fact, I
> would like to overplot the contour plots on a PLOT_3DBOX plot.
>
> CONTOUR has a ZVALUE keyword that allows one to position an "xy"
> contour plot in the z-dimension, but AFAIK, there is no similar
> "XVALUE" or "YVALUE" keyword.
>
> Can anyone provide an example of how to draw a contour plot on an "xz"
> surface in a 3-D plot?

I solved my own problem. One way to do this is to contour each of the
planes separately, saving the contour coordinates. Draw the 3D plot
and then plot each set of contours, specifying the x-, y-, and z-
coordinates. If anyone is interested, I'll post some code.

Ken

Subject: Re: Contour plots on xz and yz surfaces
Posted by K. Bowman on Wed, 14 Jun 2000 07:00:00 GMT
View Forum Message <> Reply to Message

In article <8i7ih4$d6s$1@peque.uv.es>, Luis Alonso <luis.alonso@uv.es> wrote:

> I'm interested in how you do it, thanks!

Here's the basic code. Run it with no arguments to see a sample.

Ken

```
PRO TEST_3CONTOUR, x, y, z, xy, xz, yz, xc, yc, zc

;   x,  y,  z  : coordinates of points to plot in 3-D scatterplot
;   xy, xz, yz : functions to be contoured in each of the planes
;   xc, yx, zc : coordinates of grids for xy, xz, yz

IF (N_PARAMS() EQ 0L) THEN BEGIN
  np = 1000L
```

```
  x = RANDOMU(dseed, np)
  y = RANDOMU(dseed, np)
  z = RANDOMU(dseed, np)
  nx = 20L
  ny = 25L
  nz = 30L
  xc = FINDGEN(nx)/(nx-1L)
  yc = FINDGEN(ny)/(ny-1L)
  zc = FINDGEN(nz)/(nz-1L)
  xy = DIST(nx, ny)
  xz = DIST(nx, nz)
  yz = DIST(ny, nz)
ENDIF

CONTOUR, xy, xc, yc, PATH_XY = xy_path, /PATH_DATA_COORDS, PATH_INFO = xy_info
;Compute x-y contours
CONTOUR, xz, xc, zc, PATH_XY = xz_path, /PATH_DATA_COORDS, PATH_INFO = xz_info
;Compute x-z contours
CONTOUR, yz, yc, zc, PATH_XY = yz_path, /PATH_DATA_COORDS, PATH_INFO = yz_info
;Compute y-z contours

xmin =  0.0
xmax =  1.0
ymin =  0.0
ymax =  1.0
zmin =  0.0
zmax =  1.0
PLOT_3DBOX, x, y, z, PSYM = 3, TITLE = 'Test Plot', $                    ;Plot 3D scatterplot
  XTITLE = 'X', XRANGE = [xmin, xmax], $
  YTITLE = 'Y', YRANGE = [ymin, ymax], $
  ZTITLE = 'Z', ZRANGE = [zmin, zmax]

FOR i = 0L, N_ELEMENTS(xy_info) - 1L DO BEGIN
  ii = xy_info(i).offset + [LINDGEN(xy_info(i).n), 0L]
  PLOTS, xy_path(0L,ii), $                                    ;Draw an x-y contour
       xy_path(1L,ii), $
       REPLICATE(zmin, xy_info(i).n+1L), $
       /T3D
ENDFOR

FOR i = 0L, N_ELEMENTS(xz_info) - 1L DO BEGIN
  ii = xz_info(i).offset + [LINDGEN(xz_info(i).n), 0L]
  PLOTS, xz_path(0L,ii), $                                    ;Draw an x-z contour
       REPLICATE(ymax, xz_info(i).n+1L), $
       xz_path(1L,ii), $
       /T3D
ENDFOR
```

```
FOR i = 0L, N_ELEMENTS(yz_info) - 1L DO BEGIN
  ii = yz_info(i).offset + [LINDGEN(yz_info(i).n), 0L]
  PLOTS, REPLICATE(xmax, yz_info(i).n+1L), $                    ;Draw an y-z contour
        yz_path(0L,ii), $
        yz_path(1L,ii), $
        /T3D
ENDFOR

RETURN
END
```

Subject: Re: Contour plots on xz and yz surfaces
Posted by Luis Alonso on Wed, 14 Jun 2000 07:00:00 GMT
View Forum Message <> Reply to Message

I'm interested in how you do it, thanks!

"Kenneth P. Bowman" <kbowman@null.net> wrote
> I solved my own problem. One way to do this is to contour each of the
> planes separately, saving the contour coordinates. Draw the 3D plot
> and then plot each set of contours, specifying the x-, y-, and z-
> coordinates. If anyone is interested, I'll post some code.
>
> Ken
