
Subject: Re: slice of 2D surface

Posted by [Med Bennett](#) on Wed, 30 Oct 2002 18:19:52 GMT

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Bob Jenkins wrote:

> My data is given by x,y,z coords (i.e. 3 independent vectors). I've
> made a 2D surface using the surface func. How can I take slices of
> the resulting surface? I'm not able to use the slicer3 func since
> apparently it only works for true 3D volumes. Thanks.

Here's my function to do this -

```
;procedure to generate cross-section from ax,ay to  
;bx,by surface grid
```

```
function xsecf,grid,xax,yax,ax,ay,bx,by,n
```

```
;grid is the 2-D surface  
;xax is the array with x coordinates of the surface  
;yax "      y      "  
;ax,ay,bx,by are the x and y coordinates of the  
;  end points of the section you want  
;n is the number of points you want along section line
```

```
xs=fltarr(n) ;array for result
```

```
dx=bx-ax  
dy=by-ay
```

```
delx=dx/(n-1.) ;incremental distance in x  
dely=dy/(n-1.) ;incremental distance in y  
xsinc=sqrt(delx^2 + dely^2)  
xsxax=findgen(n)*xsinc  
print,'cross-section increment',xsinc
```

```
for i=0,n-1 do begin
```

```
    px = ax + i*delx ;compute coords of each point on x-section  
    py = ay + i*dely
```

```
    wx = where(xax le px,cx) ;find indices of southwest corner  
    ;of the cell in which the point falls
```

```
    wy = where(yax le py,cy)
```

```
    wx = wx(cx-1)
```

```
    wy = wy(cy-1)
```

```
    ;get x,y,z coords of four corners :
```

```
gx = [xax(wx),xax(wx),xax(wx+1),xax(wx+1)]
gy = [yax(wy),yax(wy+1),yax(wy+1),yax(wy)]
gz = [grid(wx,wy),grid(wx,wy+1), $
      grid(wx+1,wy+1),grid(wx+1,wy)]
```

```
gdist = sqrt( (px-gx)^2 + (py-gy)^2 ) > 0.01
```

```
pz = total(gz*((1./gdist^2)/total(1./gdist^2)))
xs(i)=pz
```

```
endfor
;plot,xsxax,xs
return,xs
```

```
end
```
