
Subject: Re: summation and 3d plot

Posted by [Jeremy Bailin](#) on Fri, 30 Oct 2009 03:55:49 GMT

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On Oct 28, 8:40 pm, pp <pp.pente...@gmail.com> wrote:

> On Oct 28, 9:12 pm, Nicki <nickireite...@yahoo.de> wrote:

>

>> However the r0 did not work. And there is another error. The error

>> message says "subscript range values of the form low:high must be >=0,

>> < size, with low <= high: S" and the error is in the S[i,j,*]=...

>> line...

>> What does that mean???

>

> There were a few typos. This should work:

>

> pro testif

> nrows=1.

> dfov=60.

> mu=438.689

> ri=0.1

> wdet=45.

> r=50.

> a=73.73

> N=10

> d=0.736

> f=29.33

> nx=findgen(64)

> ny=findgen(64)

> x0=(30./32.*(0.5+nx))-30.

> y0=(30./32.*(0.5+ny))-30.

> N=findgen(10)

> S=dblarr(n_elements(nx),n_elements(ny),n_elements(N))

> phi=N*36*!pi/180

> for i=0,n_elements(nx)-1 do begin

> for j=0,n_elements(ny)-1 do begin

> r0=sqrt(x0[i]^2+y0[j]^2)

> if (r0 gt 30.) then S[i,j,*]=0 else begin

> x=abs(x0[i]*cos(phi)+y0[j]*sin(phi))

> y=-x0[i]*sin(phi)+y0[j]*cos(phi)

> h=50.-y

> deffs=sqrt(d^2+2/mu*tan(a/2*!pi/180))

> S[i,j,*]=deffs^2*(sin(atan(x/(h))))^3/(4*h)^2*100

> deffr=d+alog(2)/mu*tan(a/2*!pi/180)

> R=sqrt((h/f*ri)^2+(deffr*(h+f)/f)^2)

> endelse

> endfor

> endfor

> S_plot=total(S,3)

```
> print, x0, y0, s_plot  
> isurface,S_plot,x0,y0  
> end
```

Can't you replace the for loops with:

```
nnx = n_elements(nx)  
nny = n_elements(ny)  
nN = n_elements(N)  
x0 = rebin(reform(x0,nnx,1,1),nnx,nny,nN)  
y0 = rebin(reform(y0,1,nny,1),nnx,nny,nN)  
phi = rebin(reform(phi,1,1,nN),nnx,nny,nN)  
r0 = sqrt(x0^2 + y0^2)  
x = abs(x0*cos(phi) + y0*sin(phi))  
y = -x0*sin(phi) + y0*cos(phi)  
h = 50.-y  
deffs = sqrt(d^2 + 2./mu*tan(a/2.*!pi/180.))  
S = deffs^2 * sin(atan(x/h))^3 / (4.*h)^2 * 100.  
deffr = d + alog(2.)/mu*tan(a/2.*!pi/180.)  
R = sqrt((h/f*ri)^2 + (deffr*(h+f)/f)^2)
```

-Jeremy.
