Subject: Re: summation and 3d plot
Posted by Jeremy Bailin on Fri, 30 Oct 2009 03:55:49 GMT
View Forum Message <> Reply to Message

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.
