Subject: POLAR_SURFACE function
Posted by Jih-Hong Shue on Fri, 25 Jul 1997 07:00:00 GMT
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Did anyone ever use the POLAR_SURFACE function to
interpolate a surface from polar coorcinates to
rectangular coordinates? I found a problem when
I used this function for my research.
The interpolated surface has a discontinuity
on positive X axis (zero theta). To illustrate this
problem, I have written the following short program.

```
r=findgen(51)/50.
theta=findgen(25)*15.*!dtor
x=r#cos(theta)
y=r#sin(theta)
z=exp(-r^2)#replicate(1.,25)
zz=polar_surface(z,r,theta,/grid)
surface,z,x,y
window,2
surface,zz
end
```

After running this program, you can see a spike extending
from the top to the bottom on the interpolated surface.

I am now doing an interpolation from grids in polar
coordinates to another set of grids in polar coordinates.
I was searching for IDL online help, but I found no
procedures or functions which can interpolate the data
in polar coordinates. Thus, I figured out a way--use
POLAR_SURFACE to interpolate grids to retangular
coordinates; and use BILINEAR to interpolate from
old grids to new grids; and hence transform the new
grids in polar coordinates. It seems that the
POLAR_SURFACE function doesn't work for me. Can anyone
offer an alterative way to do this interpolation?

Thank you,
Jih-Hong Shue
jhshue@stelab.nagoya-u.ac.jp

Subject: Re: POLAR_SURFACE function
Posted by Mirko Vukovic on Fri, 25 Jul 1997 07:00:00 GMT
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Jih-Hong Shue wrote:

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> Thank you,
> Jih-Hong Shue
> jhshue@stelab.nagoya-u.ac.jp

I had the same problem and solved it by specifying the grid so that no points fall on the theta=0. Quite annoying.

--
Mirko Vukovic, Ph.D 3075 Hansen Way M/S K-109
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Subject: Re: POLAR_SURFACE function

Posted by Jih-Hong Shue on Wed, 30 Jul 1997 07:00:00 GMT
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> I had the same problem and solved it by specifying the grid so that no
> points fall on the theta=0. Quite annoying.
> --

Thanks for your solution. It works.
I shifted theta a little bit, i.e., using theta=0.0001
instead of theta=0. In this way, I still can keep
the information at theta=0.

I also traced the source program of POLAR_SURFACE.
It seems that the problem is come from TRIGRID.

Regards,
Jih-Hong