Subject: Polar_contour question
Posted by thtran296 on Tue, 25 Jul 2017 19:39:18 GMT
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Hi all,

So I am tasked with using the "polar_contour" procedure in IDL to plot things.
I am given 2 arrays of data, 1 is the radius, and the other is Angle.

radius = [.....] ---> this is an array of 900 elements, randomly from value of 0 to 2000 km.
Angle = [.....] ----> this is an array of 900 elements too, randomly from value of 0 to 6 rad.

Reading from the IDL help page for the polar_contour procedure, it looks something like this:

polar_contour, z, theta, r.

I know that "z" will be a 2-D array (n x n matrix) , and theta and r are 1-D array each. But I'm having problem with what values actually go into each of these arguments? And where in the argument should my 2 arrays (given above) go?

IDL help page only defines "Z" as "the data values to be contoured." What does that even mean? Theta and r are defined by IDL as vectors of angles and radius, respectively. But what actually goes into these 2 vectors?

Could somebody please help clarify things for me?
Thank you so much.

Subject: Re: Polar_contour question
Posted by Markus Schmassmann on Wed, 26 Jul 2017 12:34:01 GMT
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On 07/25/2017 09:39 PM, thtran296@gmail.com wrote:
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> Could somebody please help clarify things for me?

Do you want to contour the density of the points?
Then try something like this:

```
binsize=10
radius= randomu(seed,900)*2000
angle = randomu(seed,900)*6
h=hist_2d( radius*sin(angle),radius*cos(angle),min1=-2000,max1=2000, $
    min2=-2000,max2=2000,bin1=binsize,bin2=binsize )
binsize2=2*!pi/200
h2=hist_2d( radius, angle, min1=0,max1=2000,bin1=binsize, $
    min2=0,max2=2*!pi,bin2=binsize2)

contour, h, [-2000:2000:binsize], [-2000:2000:binsize]
contour, smooth(float(h),10,/edge_truncate), $
    [-2000:2000:binsize], [-2000:2000:binsize]
polar_contour, h2, [0:2000:binsize], [0:2*!pi:binsize2]
polar_contour, smooth(float(h2),10,/edge_truncate), [0:2000:binsize], $
    [0:2*!pi:binsize2]
```

However, the smoothing in polar coordinates might have to be done
differently, but I don't know how without looking into it in more detail.

As to what "the data values to be contoured" means:
Imagine that all data triples (radius,angle,z) in cylindrical
coordinates are part of a surface.
The contours are then the lines on this surface which have the same
altitude (z value).

I hope this helps, if not, try to describe better what you want.

Good luck, Markus
