
Subject: Re: Interpolation

Posted by [Spon](#) on Mon, 14 Apr 2008 15:34:15 GMT

[View Forum Message](#) <> [Reply to Message](#)

On Apr 13, 1:56 am, tarequea...@gmail.com wrote:

- > Step one: Real data in a XY frame
- > Step two: 'Design a new xy frame, say X'Y' frame, whose values are
- > generated from a chosen r_vec and theta_vec.
- > Step 3: Now interpolate from XY to X'Y'.
- >
- > Tareque

Hi Tareque,

I'm guessing you know whereabouts your small frame is, within your big frame, right?

So, if you take your big normal (x'y') frame, your small frame can be defined by two points, bottom-left and top-right - let's call them (b,l) & (t,r) - in terms of x'y' grid co-ords.

```
; Once you've worked out where these two points are, you can use  
CONGRID on your xy dataset:
```

```
tempx = r - l ; How many data points of the x'y' grid does the xy grid  
span
```

```
tempy = t - b ; in each dimension?
```

```
; interpolate to new sub-grid  
newdata = congrid(data, tempx, tempy)
```

```
; Your x'y' frame co-ordinates for this data are  
newx = l + lindgen(tempx)  
newy = b + lindgen(tempy)
```

```
; (this bit is just array juggling to avoid for loops)  
newx = rebin(newx,tempx,tempy)  
newy = rebin(reform(newy,1,tempy),tempx,tempy)  
newx = reform(newx,n_elements(newx))  
newy = reform(newy,n_elements(newy))
```

```
; x'y' co-ordinates for ever datapoint in 'newdata'  
xycoords = transpose([[newx],[newy]])
```

```
; so your new data should be at r/theta co-ordinates defined by:  
polarcoords = cv_coord(from_rect = xycoords, /to_polar)
```

I've assumed that your big circle is centered on the origin.
I've also assumed your small circle is in the upper-right quadrant of
your large circle here,
so I don't have to wrap my mind around minus-signs and the like...

I hope this helps and that I've understood your question
correctly. :-)

Regards,
Chris
