Subject: Re: mapping/interpolation from one irregular grid to another (different) irregular grid.
Posted by Dick Jackson on Wed, 25 Jan 2012 07:38:52 GMT
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Hi Paul,

If I understand you right, I'd say GridData is at least worth a try. Online help has several examples, but none doing quite what you want. Using the variables from there (scattered points f as a function of x and y):

```
; Create a dataset of N points.
n = 100 ;# of scattered points
seed = -121147L ;For consistency
x = RANDOMU(seed, n)
y = RANDOMU(seed, n)

; Create a dependent variable in the form a function of (x,y)
; with peaks & valleys.
f = 3 * EXP(-((9*x-2)^2 + (7-9*y)^2)/4) + $
   3 * EXP(-((9*x+1)^2)/49 - (1-0.9*y)) + $
   2 * EXP(-((9*x-7)^2 + (6-9*y)^2)/4) - $
   EXP(-(9*x-4)^2 - (2-9*y)^2)

; -----
; Then, create another set of irregular (x, y)
; points to sample, and sample them:

xOut = RandomU(seed, n)
yOut = RandomU(seed, n)
fOut = GRIDDATA(x, y, f, XOut=xOut, YOut=yOut)

; -----
; To confirm that the gridding of this small set of points is
; doing what we intend, these two contour plots bear some similarity:

!P.Multi=[0,1,2]
Contour, f, x, y, /IRREGULAR, LEVEL=FIndGen(11)/10*5, /FOLLOW
Contour, fOut, xOut, yOut, /IRREGULAR, LEVEL=FIndGen(11)/10*5, /FOLLOW
```

There are loads of options in GridData for interpolation methods, etc.

Hope this is helpful in some way.

Cheers,
-Dick

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