Subject: min_curve_surf
Posted by ianpaul.freeley on Fri, 18 May 2007 00:57:24 GMT
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I have an irregular model surface f(x,y) sampled at irregularly spaced grid points, and I'd like to interpolate a few new points. The model is not particularly well behaved everywhere, so I don't like the results I'm getting from min_curve_surf since it uses all the model points. I'm finding if I clip points far away from where I'm interpolating the new points it can change my result significantly.

Some questions:
1) Why is there no difference when I try to use the tps keyword in min_curve_surf?
the following:

```
n=15
x=randomu(seed,n)
y=randomu(seed,n)
xpout=findgen(11)/10.-.5
ypout=findgen(11)/10.-.5
z=exp(-2.*((x^2+y^2)))
r1=min_curve_surf(z,x,y,xpout=xpout,ypout=ypout,/double)
 r2=min_curve_surf(z,x,y,xpout=xpout,ypout=ypout,/tps,/double )
print, r1-r2
```

results in:

```
   0.0000000      0.0000000      0.0000000      0.0000000
     0.0000000      0.0000000      0.0000000      0.0000000
     0.0000000      0.0000000      0.0000000
```

I know the two should be similar, but it gives me the same result regardless of what I do.

2) Is there any good way to get tri_surf to interpolate to irregular points? Or even just a single specified x,y point?

3) Are there any other simple 3d interpolation routines out there I should use? These built-in routines seem lame enough that I'm tempted to just grab the 4 closest points and fit a plane.

Thanks for the help. It feels like someone must have solved this problem before and I just can't find where they did it.