
Subject: Re: Minimum curvature surface problem
Posted by [James Kuyper](#) on Tue, 22 Oct 2002 00:04:26 GMT
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Med Bennett wrote:

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> I'm having a problem using the min_curve_surf function. I am feeding it
> data where X and Y are in UTM coordinates (like 650000, 4073500) and Z
> ranges from 0.25 to 27,300. The result from min_curve_surf in IDL is a
> paraboloid looking surface with a minimum of 2.4E+10 and a max of
> 1.2E+15. Needless to say, this is dramatically wrong. I also tried
> subtracting off the minimums from the X and Y values to reduce the
> number of sig figs, but this does not seem to help. I can compute a
> minimum curvature surface with the same data in another software package
> (Surfer, Golden Software) and it gives me a reaasonable result. What's
> wrong with the IDL implementation, or what am I doing wrong?

If you're plotting geo-referenced data covering a significant portion of the Earth, then you should probably be using the /SPHERE keyword. If you are using /SPHERE, then X and Y need to be latitude and longitude in degrees, rather than UTM coordinates.

Other than that, I can't think of anything obvious. It might help to post your code.

Subject: Re: Minimum curvature surface problem
Posted by [Med Bennett](#) on Tue, 22 Oct 2002 16:56:48 GMT
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Hi James,

The area in question is only 4000 meters east-west and 2000 meters north-south, so I don't think the earth's curvature is a problem. My code is really just the command

```
mcs = min_curve_surf(cddata,cx,cy,xout=xax,yout=yax)
```

where xax and yax are just the grid definition. My data looks like

```
IDL> for i=0,57 do print,cddata[i],cx[i],cy[i]
2.50000    654388.42    4074227.3
2.50000    653843.10    4074772.3
2.50000    653290.98    4074706.9
2.50000    653323.82    4075362.3
2.50000    653851.11    4074328.6
2.50000    653848.19    4073995.6
0.250000   653290.04    4074263.0
2.50000    653305.74    4073885.9
35.6000    652827.10    4074199.2
2.50000    652820.14    4074587.5
2.50000    652750.34    4074996.8
2.50000    652349.49    4074956.4
73.1000    652244.41    4074843.5
1630.00    652355.23    4074634.6
664.000    652379.22    4074291.0
1990.00    652375.85    4073980.2
2.50000    652046.13    4073952.2
3000.00    652031.08    4074295.9
151.000    652034.06    4074628.9
1230.00    651699.00    4074401.0
2.50000    651713.84    4074068.3
8830.00    652951.30    4073778.5
5.00000    653031.97    4073758.4
186.000    651272.11    4074506.6
3690.00    651429.43    4074507.6
20100.0    651464.52    4074536.9
3500.00    651552.10    4074610.7
2770.00    651545.20    4074794.1
93.7000    651540.86    4075159.0
2.50000    650900.82    4074493.5
11600.0    652630.78    4073856.0
24500.0    652701.20    4073805.4
```

14100.0	652717.04	4073748.5
27300.0	652619.43	4073929.3
251.000	651228.38	4074786.7
11200.0	651343.95	4074680.8
2.50000	652661.85	4073649.9
9.10000	652528.42	4073788.9
2.50000	652527.30	4073773.8
2350.00	652648.33	4073675.5
2080.00	652648.17	4073683.7
12.3000	652647.31	4073705.1
2.50000	652704.45	4073637.8
2.50000	652706.39	4073645.0
2.50000	652706.39	4073645.0
2.50000	652796.01	4073604.5
2.50000	652978.58	4073553.7
3600.00	652700.44	4073719.5
10300.0	652772.18	4073722.6
4900.00	653065.91	4073832.9
0.600000	653198.66	4073806.5
13900.0	651645.66	4074401.0
5.00000	651053.48	4075268.2
5.00000	650699.44	4075252.1
5.00000	650653.14	4074709.0
670.000	651331.96	4075131.0
1630.00	651127.30	4074695.9
20.0000	650907.27	4075118.6

I'd be happy to mail a couple of gif's illustrating the results if you're interested. Thanks, Med

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 Posted by [Med Bennett](#) on Tue, 22 Oct 2002 17:16:55 GMT
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>

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bad!

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> interested. Thanks, Med

How embarassing - it appears that the one duplicate X,Y data point I had in my arrays was causing min_curve_surf to blow up. Not the first time I've tripped up by @\$&* duplicates! These are analytical chemistry data and they often have duplicate analyses from the same location. sorry sorry sorry - M