Subject: Re: Weird behaviour in SURFACE procedure
Posted by Paul Van Delst[1] on Tue, 17 Jun 2008 15:54:07 GMT
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Bob Crawford wrote:
> On Jun 17, 10:05 am, Paul van Delst <Paul.vanDe...@noaa.gov> wrote:
>> Hello,
>>
>> I put together the following test case:
>>
>> pro testit, lego=lego
>> t = [273.0,279.0,285.0,291.0,297.0,303.0]
>> s = [20.0,22.0,24.0,26.0,28.0,30.0,32.0,34.0,36.0,38.0,40.0]
>> e = [[79.3482,77.6361,75.9746,74.5451,73.0994,71.4641],$
>> [79.1002,77.3120,75.5867,74.0939,72.6238,71.0040],$
>> [78.8522,76.9879,75.1988,73.6427,72.1483,70.5440],$
>> [78.6042,76.6638,74.8109,73.1916,71.6728,70.0839],$
>> [78.3561,76.3397,74.4230,72.7404,71.1973,69.6238],$
>> [78.1081,76.0156,74.0351,72.2892,70.7218,69.1638],$
>> [77.8601,75.6915,73.6473,71.8380,70.2463,68.7037],$
>> [77.6121,75.3674,73.2594,71.3869,69.7708,68.2436],$
>> [77.3641,75.0433,72.8715,70.9357,69.2953,67.7836],$
>> [77.1161,74.7192,72.4836,70.4845,68.8198,67.3235],$
>> [76.8680,74.3951,72.0957,70.0333,68.3443,66.8634]]
>> window,0
>> surface, e, t, s,$
>> xtitle='Temperature (K)',$
>> ytitle='Salinity (ppt)',$
>> ztitle='Static permittivity',$
>> charsize=3.0, lego=lego
>> window,1
>> contour, e, t, s,$
>> xtitle='Temperature (K)',$
>> ytitle='Salinity (ppt)',$
>> title='Static permittivity', $
>> levels=[66,68,70,72,74,76,78,80], $
>> c_labels=[1,1,1,1,1,1,1,1], $
>> c_charsize=1.0
>> isurface, e, t, s,$
>> xtitle='Temperature (K)',$
>> ytitle='Salinity (ppt)',$
>> ztitle='Static permittivity'
>> end
>>
>> If I simply run the above, the result of the SURFACE procedure does not match either the
>> CONTOUR or ISURFACE output. It's as though there has been a rotation of 90deg clockwise
in
>> the surface, but not the axes. If you count the number of datapoints in the x- (or

>> temperature) direction of the surface plot, I see 11 values and it should be 6.
>>
>> However, if I use the /LEGO keyword, then the SURFACE output seems correct compared to the
>> other two plots.
>>
>> Note that the max value of the data should occur on the T=273K, S=20.0ppt corner, and the
>> min value in the T=303K, S=40.0ppt corner.
>>
>> Can someone else run the above test code and verify?
>>
>> I'm running:
>>
>> IDL> print, !version
>> { x86 linux unix linux 7.0 Oct 25 2007   32   64}
>>
>> on RHE 4.0
>>
>> Thanks for any feedback.
>>
>> cheers,
>>
>> paulv
>
> Same result here (WinXp) ... but I think what you're seeing is the
> underside of the surface on the surface plot.

Ahhh.....

Or should I say, "D'oh!" ?

You're a genius!

I changed the above code to do

```
  surface, e, t, s,$
         xtitle='Temperature (K)',$
         ytitle='Salinity (ppt)',$
         ztitle='Static permittivity',$
         charsize=3.0, lego=lego,/save
  plots, [273,273],[20,20],[66,79.3482],/t3d
```

and, sure enough, the line goes to the correct point. Using the /UPPER_ONLY keyword also confirms.

Man, I've got to print out that surface and see if its eyes follow me as I walk around the room..... (ehem).

Thanks again!

cheers,

paulv
