Subject: Re: Weird behaviour in SURFACE procedure
Posted by Bob[3] on Tue, 17 Jun 2008 15:37:29 GMT
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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.

Bob.

---

Subject: Re: Weird behaviour in SURFACE procedure
Posted by Bob[3] on Tue, 17 Jun 2008 15:43:24 GMT
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On Jun 17, 11:37 am, Bob Crawford <Snowma...@gmail.com> wrote:
> On Jun 17, 10:05 am, Paul van Delst <Paul.vanDe...@noaa.gov> wrote:
>
>
>
>
>
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>
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>> e = [[79.3482,77.6361,75.9746,74.5451,73.0994,71.4641],$
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```
>>         [78.8522,76.9879,75.1988,73.6427,72.1483,70.5440],$
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>>         [78.3561,76.3397,74.4230,72.7404,71.1973,69.6238],$
>>         [78.1081,76.0156,74.0351,72.2892,70.7218,69.1638],$
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>>         [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.
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>>  { 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.
>
> Bob.- Hide quoted text -
>
> - Show quoted text -

Try adding /upper_only or /lower_only or a skirt parameter to the
SURFACE command to see what is happening.

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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],$
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>> [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.
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>>  However, if I use the /LEGO keyword, then the SURFACE output seems correct compared to
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>>  other two plots.
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>>
>>  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

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