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Subject: Re: Problems on the Savitzky-Golay smoothing filter

Posted by [mengran](#) on Thu, 21 May 2009 07:28:54 GMT

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> On May 20, 12:59 pm, mengran <mengra...@gmail.com> wrote:

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>
>> Hi,everybody,
>> I have got a annoying problem about the implementing the
>> Savitzky-Golay filter to smooth the time series RS data in the IDL.
>> Actually, I know the function of the Savitzky-Golay filter in IDL is
>> SAVGOL.But the question is the result I got is either a horizon line
>> or the same as the original line(In other words, the filter seems not
>> to work at all), when I changed the parameters of the SAVGOL function.
>> (when the DEGREE = NL + NR(PARA OF THE SAVGOL FUNCTION), THE RESULT
>> IS THE SAME AS THE ORIGINAL, OTHERWISE, THE RUSULT IS A HORISON LINE)
>> My pro is as follows. The class1 to class9 from txt files are
>> the samples of the time series RS data.
>> Is there sth wrong with my code ? Or the RS data that I used
>> is not appropriate for the Savitzky-Golay filter, and I take a wrong
>> method to smooth data ? I need your suggestions, thanks a lot !
>
>> PRO Savgol_example
>
>> ;RESTORE, 'C:\WorkSpace\Default\myPlotTemplate.sav'
>> rootPath = 'C:\WorkSpace\Default\class'
>
>> n = 1 & filename = strarr(9)
>> for i = 0, 8 do begin
>
>> filename[i] = strjoin([rootPath, strtrim(n, 2),'.txt'])
>> n++
>
>> endfor
>> for i = 0,8 do begin
>
>> plotTemplate = ASCII_TEMPLATE(filename[1])
>> y1 = READ_ASCII(filename[1], TEMPLATE = plotTemplate, COUNT =
>> $ count,NUM_RECORDS = 46 )
>> x = indgen(46)
>> iPlot,x,y1.FIELD1, NAME = 'Original Curve', $
>> COLOR=[255, 0, 0], SYM_INDEX = 4, yrange = [0,+8000], VIEW_TITLE =
>> strmid(filename[1], 21, 6)
>> void = ITGETCURRENT(TOOL=oTool)
>> void = oTool->DoAction('Operations/Insert/Legend')
>
```

```
>> ; savgol
>> savgolFilter = SAVGOL(2, 2, 0,4)
>> iPlot,x,CONVOL(y1.FIELD1, savgolFilter), /OVERPLOT, $
>> COLOR=[0, 0, 255], THICK=2, $
>> NAME='Savitzky-Golay'
>> void = oTool->DoAction('Operations/Insert/LegendItem')
>> ;SAVE, plotTemplate, FILENAME='C:\WorkSpace\Default
>> \myPlotTemplate.sav'
>
>> endfor
>
>> END
>
> Hi Mengran,
>
> I have an implementation of the Savitsky-Golay filter in IDL/ENVI
> based on this paper:
>
> Jin Chen, Per. Jonsson, Masayuki Tamura, Zhihui Gu, Bunkei
> Matsushita, Lars Eklundh. 2004.
> A simple method for reconstructing a high-quality NDVI time-series
> data set based on
> the Savitzky-Golay filter. Remote Sensing of Environment 91: 332-344
>
> If you are interested I can send you the code.
>
> Allard
Hi Allard,
Thank you very much! Could you please send me the code that you
mentioned above?
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Mengran

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