Subject: smooth function and rounding error
Posted by simona bellavista on Thu, 17 Dec 2009 23:20:13 GMT
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Hi,

there is something I do not understand about smooth function, or probably about numerics in general.
I implemented my version of smooth function, following the prescription in
http://idlastro.gsfc.nasa.gov/idl_html_help/SMOOTH.html
I compared these two versions on same data, ranging from ~10^-1 to ~10^-5
and I get a relative error between the methods up to ~10^-1. it looks rather big.
it is the same prescription on same data. does it happen because my implementation is too naive and I accumulate rounding errors in it? or because of smooth function itself?
I am not worried about performance here, just accuracy.

my implementation is the following:

```
function smooth_equivalent, A, width

 n=n_elements(A)
 y=DBLARR(n)
 y=A
 for i=(width)/2,n-(width)/2-1,1 do begin
  y[i]=total(A[i-width/2:i+width/2-1])/width
 endfor
 RETURN, y

end
```

many thanks,
simona