Subject: Re: Smooth and /EDGE_TRUNCATE
Posted by David Fanning on Tue, 29 Apr 2014 16:04:09 GMT

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Fabien writes:

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> I've lost 3 hours of my life on this. Can someone explain me why the
> /EDGE_TRUNCATE keyword has an incidence on the results WITHIN the image,
> where the kernel meets no edge?
>
> pro test_smooth
>
>    ; make an array with a nan in the center
>    array = FINDGEN(5,5)
>    array[2,2] = !VALUES.F_NAN
>
>    print, ' Exp 1'
>    print, 'Expected', MEAN(array[1:3,1:3], /NAN)
>    print, 'No truncate', (smooth(array, 3, /NAN))[2,2]
>    print, 'Truncate', (smooth(array, 3, /NAN, /EDGE_TRUNCATE))[2,2]
>
>    ; so far so good. Add a NaN somewhere else
>    array[1,1] = !VALUES.F_NAN
>    print, ' Exp 2'
>    print, 'Expected', MEAN(array[1:3,1:3], /NAN)
>    print, 'No truncate', (smooth(array, 3, /NAN))[2,2]
>    print, 'Truncate', (smooth(array, 3, /NAN, /EDGE_TRUNCATE))[2,2]
>
> end
```

Not sure this "explains" it, but this section of the documentation might
have at least saved you a couple of hours. :^)

Note: Normally, two-dimensional floating-point arrays are smoothed in
one pass. If any of the EDGE_* keywords are specified for a two-
dimensional floating-point array, the result is obtained in two passes,
first for all of the rows, and second for all of the columns. Therefore,
the results for points in the interior of the array may differ slightly
when any of the EDGE_* keywords are set. This difference will be most
pronounced if the array contains NaN values.

Cheers,

David
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David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/

Sepore ma de ni thue. ("Perhaps thou speakest truth.")