Subject: Re: Negative Variance?
Posted by pgrigis on Thu, 19 Mar 2009 22:08:11 GMT
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anniebryant@gmail.com wrote:
> I am using the VARIANCE comand in IDL and am getting negative values.
> The description in the HELP menu for IDL doesn't provide much
> information, but from what I know, I thought variance was either an
> absolute value or a deviation from a squared number, neither of which
> could yield a negative value.
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> I am looking at the variance for 2 different bands in an AVIRIS
> image. I use the same .pro, just change the band I am looking at.
> The results for Band 1 (lets call it) make sense: all positive
> values. For Band 2, I get a lot of negatives.?! How is this
> possible.
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> These are the values for Band 1:
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> integer mean std dev minimum maximum n_elements
> 2633.3 2059.3 0.0000 9367.0 (160686) =
> 160686
>
> These are the values for Band2:
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> integer mean std dev minimum maximum n_elements
> 1167.5 18269. -32768. 32767. (160686) =
> 160686

I don't see any variance here. The only negative number is the
minimum.

Ciao,
Paolo

Subject: Re: Negative Variance?
Posted by anniebryant@gmail.com on Thu, 19 Mar 2009 22:10:45 GMT
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On Mar 19, 4:08 pm, Paolo <pgri...@gmail.com> wrote:
> anniebry...@gmail.com wrote:
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> Ciao,
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Those are the values of the vector AFTER the variance was computed, it should read Variance_Band1 and Variance_Band2.

Subject: Re: Negative Variance?
Posted by Jean H. on Thu, 19 Mar 2009 22:35:59 GMT
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anniebryant@gmail.com wrote:
> On Mar 19, 4:08 pm, Paolo <pgri...@gmail.com> wrote:
>> anniebry...@gmail.com wrote:
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> Those are the values of the vector AFTER the variance was computed, it
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How can you get multiple variances for a band?
Jean

Subject: Re: Negative Variance?
Posted by anniebryant@gmail.com on Fri, 20 Mar 2009 01:47:47 GMT
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On Mar 19, 4:35 pm, "Jean H." <jghas...@DELTHIS.ucalgary.ANDTHIS.ca>
wrote:
> anniebry...@gmail.com wrote:
>> On Mar 19, 4:08 pm, Paolo <pgri...@gmail.com> wrote:
>>> anniebry...@gmail.com wrote:
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> How can you get multiple variances for a band?
> Jean

I created a moving kernel inside which to calculate the variance. So the question is. What is the variance within a 17pixel x 17pixel moving window. That is what I am calculating the variance for.

Subject: Re: Negative Variance?
Posted by wlandsman on Fri, 20 Mar 2009 02:43:45 GMT
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On Mar 19, 6:00 pm, "anniebry...@gmail.com" <anniebry...@gmail.com>
wrote:
> I am using the VARIANCE comand in IDL and am getting negative values.

I would check that you not getting round-off problems by using double precision or the /DOUBLE keyword to VARIANCE. As discussed in http://en.wikipedia.org/wiki/Algorithms_for_calculating_vari ance round-off error can accumulate in the two-pass variance calculation (used by IDL) when most values are similar but some are wildly different.

I had a similar headscratcher a few years back when I found that SMOOTHing a non-negative array could yield negative numbers. This was a roundoff problem that was fixed by using double precision.

--Wayne

Subject: Re: Negative Variance?
Posted by Homeyer on Fri, 20 Mar 2009 03:11:25 GMT
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On Mar 19, 5:00 pm, "anniebry...@gmail.com" <anniebry...@gmail.com>
wrote:
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I am not sure how you are doing your calculations.. but I think you
may have a conversion wrong in some process. If for some reason you
are converting a variance (should be a FLOAT or DOUBLE) to an INT,
which by the way maximizes at 32767 and minimizes at -32768, of course
you will have negative values. If you are converting to INTs, that is
your first problem. Variance should always be a FLOAT or DOUBLE.

Cheers,
Cameron Homeyer
