
Subject: Re: TOTAL gives totally different result on identical array

Posted by [Fabzou](#) on Fri, 08 Jul 2011 10:34:26 GMT

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Funny, It looks like the post I wrote a couple of days ago. You should have a look to this thread :

http://groups.google.com/group/comp.lang.idl-pvwave/browse_thread/thread/47482e565173a127/b58f3a3ba7934b93?#b58f3a3ba7934b93

On 07/08/2011 12:22 PM, M. Suklitsch wrote:

> Hi everybody,

>

>

> I don't exactly know how to start this question, so I'll probably just
> tell you the workflow which leads to a very disturbing result.

>

> I have a netCDF file which contains temperature data for a decade on
> daily time resolution. And I have two different versions of an IDL
> based evaluation tool which should read in the data and do some stuff
> with it.

>

> Now, although I read in exactly the same data (the data array has the
> same size in both IDL sessions with both versions of my tool), TOTAL
> and MEAN give completely different results. And I do not understand
> how that can be, since the data does not contain any NaN values, and
> MIN and MAX of the array are identical in both IDL sessions. The only
> difference between the two IDL sessions are different source codes
> that lead to the point where I do the stuff below. Here is what I get:

>

> Session 1:

> =====

> IDL> ncid=NCDF_OPEN('my_input_file.nc')

> IDL> ncdf_varget, ncid, 'tas', testa

> IDL> help, mean(testa), min(testa), max(testa)

> <Expression> FLOAT = 270.284

> <Expression> FLOAT = 232.614

> <Expression> FLOAT = 317.723

> IDL> print, total(testa)/n_elements(testa)

> 270.284

> IDL> print, n_elements(testa)

> 127124400

> IDL> print, total(testa)

> 3.43597e+10

> IDL> idx=where(testa lt 275., countidx, ncomplement=countnidx)

> IDL> help, countidx, countnidx

> COUNTIDX LONG = 22074445

> COUNTNIDX LONG = 105049955

```
>
>
> Session 2:
> =====
> IDL> ncid=NCDF_OPEN('my_input_file.nc')
> IDL> ncd_f_varget, ncid, 'tas', testa
> IDL> help, mean(testa), min(testa), max(testa)
> <Expression>   FLOAT   =    67.5711
> <Expression>   FLOAT   =   232.614
> <Expression>   FLOAT   =   317.723
> IDL> print, total(testa)/n_elements(testa)
>    67.5711
> IDL> print, n_elements(testa)
> 127124400
> IDL> print, total(testa)
> 8.58993e+09
> IDL> idx=where(testa lt 275., countidx, ncomplement=countnidx)
> IDL> help, countidx, countnidx
> COUNTIDX      LONG    =  22074445
> COUNTNIDX     LONG    = 105049955
>
>
> So, the values within the arrays seem to be the same (since the
> counting gives the identical number of elements), yet the TOTAL (and
> MEAN) deviate completely from each other. How can that be? I am really
> confused right now. And insecure about any results I got so far.
>
>
> Regards,
> Martin
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