
Subject: Re: strange behaviour of bytscl by large arrays
Posted by [Lajos Foldy](#) on Mon, 23 Apr 2012 16:18:59 GMT
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On Monday, April 23, 2012 6:14:21 PM UTC+2, fawltyl...@gmail.com wrote:

> On Monday, April 23, 2012 4:07:00 PM UTC+2, Klemen wrote:

>> Hi folks,

>>

>> is there any explanation of why I don't get the same or at least similar results using the code below by:

>> a) using DINDGEN in line 3

>> b) using FINDGEN in line 3

>>

>> pro test

>> s = 10000

>> a = sin(findgen(s, s)/100000.)

>> b = bytscl(a)

>> write_tiff, 'b.tif', b

>> end

>>

>> The tif file I get using the DINDGEN function has waves all over the image. The option using FINDGEN produces strange results (a couple of waves and then wide bands of constant values). See the following link for the (resized) results.

>> <https://picasaweb.google.com/112572300011512591455/Eumetsat#5734593216558178098>

>>

>> I came across this problem as I tried to scale (using HIST_EQUAL and BYTSCL functions) 16-bit 5-band RapidEye data to 24-bit RGB image. Scaling the whole image produced results that were all black, smaller subsets seemed ok.

>>

>> Does anybody have a suggestion how to handle this issue?

>>

>> Cheers, Klemen

>

> I think IDL's FINDGEN() implementation is wrong: it uses a float counter instead of an integer one. The following test shows the difference:

>

> pro test

> cpu, tpool_nthreads=1

> n=10l^8

> nn=n-1

> a1=findgen(n) ; real FINDGEN()

> a2=fltarr(n)

> count=0.0

> for j=0l, nn do a2[j]=count++ ; IDL's implementation

> a3=fltarr(n)

> count=0ll

> for j=0l, nn do a3[j]=count++ ; better implementation

> print, a1[nn], a2[nn], a3[nn], format='(3F15.3)'

> end
>
> (Multithreading must be disabled because the starting values for the threads are calculated as
an integer. So the result of FINDGEN() depends on the number of your CPU cores, too :-)
>
> regards,
> Lajos

Oops! The results were missing:

IDL> test
16777216.000 16777216.000 100000000.000

regards,
Lajos
