Subject: divide by zero problems Posted by Mark Rehbein on Tue, 11 May 1999 07:00:00 GMT

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Hi,

I'm having problems with floating point divide by zero's. The application I'm using IDL for is image composition and masking. Basically, my images have cloud pixels that I have changed to a zero value. I also have a mask of the image that has values 1 for good pixel and 0 for bad pixels (cloud). I then add all my images together to get a "sum image" and add all my masks together to get a "sum mask".

Now to composite or average the images I do the following:

composite=sum image/ sum mask.

sometimes my images are very cloudy and as such my "sum mask" has zero's in it and likewise for my "sum image". So I get divide by zero's and NaN's in my resultant composite image. In fact I get whole image of NaN's in my composite even though my sum image and sum mask have decent values in them.

I'm using IDL 5.2 on UNIX box running solaris 2.6. Can anyone help?

please email me

mrehbein@aims.gov.au

Thanks in advance

Mark

Subject: Re: divide by zero problems

Posted by davidf on Thu, 13 May 1999 07:00:00 GMT

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Mark Hadfield (m.hadfield@niwa.cri.nz) writes:

> ...Sigh, I guess I'll have to switch to Matlab!

Humm. No objects, though. :-(

Cheers,

David

--

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Coyote's Guide to IDL Programming: http://www.dfanning.com/

Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: divide by zero problems

Posted by korpela on Thu, 13 May 1999 07:00:00 GMT

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In article <7he06l\$m68\$1@news5.svr.pol.co.uk>, <asowter@synopticsga.freeserve.co.uk> wrote:

- > I also had a similar problem but I used the FINITE function to test the
- > result.

Yes, this is probably the best way. Apparently the IDL on some platforms is not IEEE compliant. On those platforms (!values.f_NaN eq !values.f_NaN) can be true. I would consider this to be a major bug and would not use IDL on such a platform.

Eric

Eric Korpela An object at rest can never be

korpela@ssl.berkeley.edu stopped.

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Subject: Re: divide by zero problems

Posted by bowman on Fri, 14 May 1999 07:00:00 GMT

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- IDL> PRINT, !VALUES.F NAN EQ !VALUES.F NAN >
- % Program caused arithmetic error: Floating illegal operand

I thought that by definition NaNs are not a number and hence not equal to *anything* else. Thus the FINITE function.

Ken Bowman

Subject: Re: divide by zero problems

Posted by mallors on Fri, 14 May 1999 07:00:00 GMT

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```
In article <7hfhke$gn7$1@clam.niwa.cri.nz>,
"Mark Hadfield" <m.hadfield@niwa.cri.nz> writes:
>> .... Apparently the IDL on some platforms
>> is not IEEE compliant. On those platforms (!values.f_NaN eq
> !values.f NaN)
>> can be true. I would consider this to be a major bug and would not use
>> IDL on such a platform.
> IDL 5.2 on Windows NT gives:
    IDL> print, !values.f_NaN eq !values.f_NaN
>
>
    % Program caused arithmetic error: Floating illegal operand
>
>
> ...Sigh, I guess I'll have to switch to Matlab!
Naw, just switch to Linux :-)
 IDL> PRINT, !VALUES.F NAN EQ !VALUES.F NAN
Robert S. Mallozzi
                                         256-544-0887
                                Mail Code ES 84
Work: http://gammaray.msfc.nasa.gov/ Marshall Space Flight Center
Play: http://cspar.uah.edu/~mallozzir/ Huntsville. AL 35812
```

Subject: Re: divide by zero problems
Posted by Mark Hadfield on Fri, 14 May 1999 07:00:00 GMT
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- > Apparently the IDL on some platforms
- > is not IEEE compliant. On those platforms (!values.f_NaN eq !values.f_NaN)
- > can be true. I would consider this to be a major bug and would not use
- > IDL on such a platform.

IDL 5.2 on Windows NT gives:

IDL> print, !values.f_NaN eq !values.f_NaN 1

% Program caused arithmetic error: Floating illegal operand

...Sigh, I guess I'll have to switch to Matlab!

Mark Hadfield m.hadfield@niwa.cri.nz National Institute for Water and Atmospheric Research PO Box 14-901, Wellington, New Zealand

Subject: Re: divide by zero problems
Posted by korpela on Sat, 15 May 1999 07:00:00 GMT
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In article <bownan-1405991756240001@tl6-218-141.tca.net>,
Kenneth P. Bowman <bownan@null.tamu.edu> wrote:
>> IDL> PRINT, !VALUES.F_NAN EQ !VALUES.F_NAN
>> 1
>> % Program caused arithmetic error: Floating illegal operand
> l thought that by definition NaNs are not a number and hence not equal to > *anything* else. Thus the FINITE function.

That's the point. In IEEE math there is no need for a FINITE function. X eq X is enough to test for NaN. X EQ !Values.F_NAN should always return 0. Even if X is NaN. Period. Excamation point!

If RSI thinks it's not important that IDL be IEEE compliant, they're wrong. I may consider that bit of non-portability/non-compliance a good reason not to code for IDL under ANY platform.

Eric

--

Eric Korpela | An object at rest can never be korpela@ssl.berkeley.edu | stopped.
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Subject: Re: divide by zero problems
Posted by Frank Monaldo on Tue, 18 May 1999 07:00:00 GMT
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Mark Rehbein wrote:

>

Mark,

Try

w= where(total(mask) gt 0)

composite= sum_image(w) / sum_mask(w)

Regards, Frank Monaldo

Frank Monaldo Work: Frank_Monaldo@jhuapl.edu

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Laurel, MD 20723-6099