Subject: Divide By Zero error
Posted by Logan Lindquist on Tue, 06 Nov 2001 18:10:47 GMT
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<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<HTML><HEAD>
<META http-equiv=Content-Type content="text/html; charset=iso-8859-1">
<META content="MSHTML 6.00.2600.0" name=GENERATOR>
<STYLE></STYLE>
</HEAD>
<BODY bgColor=#ffffff>
<DIV><FONT face=Arial size=2>I got another one for all you math
whiz's!</FONT></DIV>
<DIV><FONT face=Arial size=2></FONT> </DIV>
<DIV><FONT face=Arial size=2>Here is the error</FONT></DIV>
<DIV><FONT face=Arial size=2>*****</FONT></DIV><FONT size=1>
<DIV>IDL> .STEP</DIV>
<DIV>% Program caused arithmetic error: Floating divide by 0</DIV>
<DIV>% Program caused arithmetic error: Floating illegal operand</DIV>
<DIV> </DIV>
<DIV><FONT face=Arial size=2> Caused by second statement [log]</FONT></DIV>
<DIV><FONT face=Arial size=2>****</FONT></DIV>
<DIV><FONT face=Arial size=2>f = fft(tempfft, -1)</FONT></DIV>
<DIV><FONT face=Arial size=2>power = -alog10(double(f))</FONT></DIV>
<DIV><FONT face=Arial size=2></FONT> </DIV>
<DIV><FONT face=Arial size=2></FONT> </DIV>
<DIV><FONT face=Arial size=2>I tried a bunch of different things trying to
isolate the error and get it to stop. That is why the code looks that way and
not all nice and compact. I don't understand exactly why it's givng me
invalid numbers and so this is why I shall include the output data:</FONT></DIV>
<DIV><FONT face=Arial size=2></FONT> </DIV>
<DIV><FONT face=Arial size=2>print, f</FONT></DIV>
<DIV><FONT face=Arial size=2>*****</FONT></DIV><FONT size=1>
<DIV>(55.0313, 0.000000)(0.378331, 1.10309)(-0.281250, 0.312500)(-0.284581,
0.134343)(-0.281250, 0.000000)(-0.284581, -0.134343)</DIV>
<DIV>(-0.281250, -0.312500)(0.378331, -1.10309)</DIV>
<DIV>(0.467505, 0.265950)(0.117743, -0.359700)(0.0514515, -0.0800206)(
0.0514515, -0.0175206)(0.0643956, -0.00457645)(0.0735485, 0.00457646)</DIV>
<DIV>(0.0643956, 0.0396177)(0.139840, 0.0266735)</DIV>
<DIV>(-0.234375, 0.265625)(0.0312500, -0.0845971)(-0.0156250, -0.0156250)(
-0.0129442, -0.0533471)(0.0156250, -0.0468750)(0.0312500, -0.0404029)</DIV>
<DIV>(-0.0156250, -0.0156250)(0.0754442, -0.00915291)</DIV>
<DIV>(-0.217505, 0.109700)(0.0735485, -0.0487706)(-0.00189563, 0.0708677)(
0.00725728, -0.0159502)(-0.00189563, 0.0266735)(-0.0148398, -0.00457646)</DIV>
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-0.00647209, 0.0156250)(0.000000, 0.000000)(-0.00647209, -0.0156250)</DIV>
<DIV>(0.000000, 0.000000)(0.0377221, 0.0156250)</DIV>

<DIV>(-0.217505, -0.109700)(0.0514515, 0.0266735)(0.0735485, -0.0137294)(
-0.0148398, 0.00457646)(-0.00189563, -0.0266735)(0.00725728, 0.0159502)</DIV>
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0.0312500, 0.0404029)(0.0156250, 0.0468750)(-0.0129442, 0.0533471)</DIV>
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<DIV>(0.467505, -0.265950)(0.139840, -0.0266735)(0.0643956, -0.0396177)(
0.0735485, -0.00457646)(0.0643956, 0.00457645)(0.0514515, 0.0175206)</DIV>
<DIV>(0.0514515, 0.0800206)(0.117743, 0.359700)</DIV>
<DIV> </DIV>
<DIV><FONT face=Arial size=2>print, power</FONT></DIV>
<DIV><FONT face=Arial size=2>*****</FONT></DIV><FONT size=1>
<DIV>IDL> print, power</DIV>
<DIV>-1.7406094 0.42212772 NaN NaN NaN NaN NaN 0.42212772</DIV>
<DIV>0.33021387 0.92906595 1.2886023 1.2886023 1.1911436 1.1334259 1.1911436
0.85436921</DIV>
<DIV>NaN 1.5051500 NaN NaN 1.8061800 1.5051500 NaN 1.1223743</DIV>
<DIV>NaN 1.1334259 NaN 2.1392261 NaN NaN 1.1334259 1.2886024</DIV>
<DIV>NaN 1.4234043 Infinity NaN Infinity NaN Infinity 1.4234043</DIV>
<DIV>NaN 1.2886024 1.1334259 NaN NaN 2.1392261 NaN 1.1334259</DIV>
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<DIV>0.33021387 0.85436921 1.1911436 1.1334259 1.1911436 1.2886023 1.2886023
0.92906595</DIV>
<DIV> </DIV>
<DIV><FONT face=Arial size=2></FONT> </DIV>
<DIV><FONT face=Arial size=2>What is this NaN business and why am I getting
Infinity? Arg :)</FONT></DIV>
<DIV><FONT face=Arial size=2></FONT> </DIV>
<DIV><FONT face=Arial size=2>Thanks to the math geeks,</FONT></DIV>
<DIV><FONT face=Arial
size=2>Logan</FONT></DIV></FONT></FONT></FONT></BODY> </HTML>

Subject: Re: Divide By Zero error
Posted by Craig Markwardt on Mon, 12 Nov 2001 23:03:34 GMT
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Stein Vidar Hagfors Haugan <shaugan@esa.nascom.nasa.gov> writes:

> Nigel Wade <nmw@ion.le.ac.uk> writes:
>
>> Paul Manusiu wrote:
>>
>>> What is the log of zero ??
>>>
>>> Logan Lindquist wrote:
>>>
>>> What is this NaN

>>>> business and why am I getting Infinity?
>>
>> Also, what is the log of a negative number?
>>
>> --
>> ----------
>> Nigel Wade, System Administrator, Space Plasma Physics Group
>
> Hey, someone else in the Space Plasma Physics dept might tell you
> that alog(-1) should return complex(0,+/-!PI) !
>
>   e^(-i pi) + 1 = 0

Which agrees with the result of IDL, allowing for round-off errors:

IDL> print, exp(-dcomplex(0,!dpi)) + 1d
(0.0000000, -1.2246064e-16)

Craig

--
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Craig B. Markwardt, Ph.D.   EMAIL: craigmnet@cow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
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