Subject: Re: IDL is not accurate enough!
Posted by David Fanning on Thu, 28 Aug 2008 16:35:47 GMT
View Forum Message <> Reply to Message

noahh.schwartz@gmail.com writes:

- > I've been having problems with IDL accuracy. I'm trying to perform
- > calculations using the gamma function. The problem is that it grows
- > VERY fast! Performing this calculation in double (namely gamma(x)/
- > gamma(y) with x and y big) yields the result: NaN...
- > Would it be possible to use a program like 'Mathematica' (or any
- > other) and to plug it in my ILD program? Some kind of CALL_EXTERNAL
- > that is to say. If it is possible, how can I do it and what is the
- > best program to use?

It seems *highly* unlikely to me that IDL's implementation of DOUBLE is any less accurate than any other program's implementation. In fact, this probably has something to do with the *computer* and not with the program. :-)

Cheers,

David

--

David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming (www.dfanning.com)
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: IDL is not accurate enough!
Posted by Foldy Lajos on Thu, 28 Aug 2008 16:42:11 GMT
View Forum Message <> Reply to Message

On Thu, 28 Aug 2008, noahh.schwartz@gmail.com wrote:

- > Hi,
- >
- > I've been having problems with IDL accuracy. I'm trying to perform
- > calculations using the gamma function. The problem is that it grows
- > VERY fast! Performing this calculation in double (namely gamma(x)/
- > gamma(y) with x and y big) yields the result: NaN...
- > Would it be possible to use a program like 'Mathematica' (or any
- > other) and to plug it in my ILD program? Some kind of CALL_EXTERNAL
- > that is to say. If it is possible, how can I do it and what is the
- > best program to use?

>

```
> Thanks,
> Noah
>
gamma(x)/gamma(y) => exp(Ingamma(x)-Ingamma(y))
regards,
lajos
```

Subject: Re: IDL is not accurate enough! Posted by Kenneth P. Bowman on Thu, 28 Aug 2008 20:50:47 GMT View Forum Message <> Reply to Message

In article <MPG.232081d2b8625528989730@news.giganews.com>, David Fanning <news@dfanning.com> wrote:

> noahh.schwartz@gmail.com writes:

>

- >> I've been having problems with IDL accuracy. I'm trying to perform
- >> calculations using the gamma function. The problem is that it grows
- >> VERY fast! Performing this calculation in double (namely gamma(x)/
- >> gamma(y) with x and y big) yields the result: NaN...
- >> Would it be possible to use a program like 'Mathematica' (or any
- >> other) and to plug it in my ILD program? Some kind of CALL EXTERNAL
- >> that is to say. If it is possible, how can I do it and what is the
- >> best program to use?

- > It seems *highly* unlikely to me that IDL's implementation
- > of DOUBLE is any less accurate than any other program's
- > implementation. In fact, this probably has something to
- > do with the *computer* and not with the program. :-)

Mathematica can do arbitrary-precision arithmetic ... with hundreds of digits, if necessary. Don't expect it to be fast, though, as it is all done in software, not with the hardware floating-point unit with which we normally do single- and double-precision arithmetic.

Ken

Subject: Re: IDL is not accurate enough! Posted by rtk on Thu, 04 Sep 2008 18:46:16 GMT

View Forum Message <> Reply to Message

On Aug 28, 2:50 pm, "Kenneth P. Bowman" <k-bow...@null.edu> wrote:

> Mathematica can do arbitrary-precision arithmetic ... with hundreds of digits,

- > if necessary. Don't expect it to be fast, though, as it is all done
- > in software, not with the hardware floating-point unit with which we
- > normally do single- and double-precision arithmetic.

Check on the IDL code contrib site sometime next week. I just uploaded DLMs that add arbitrary precision floating point as well as integer and rational types to IDL. These are wrappers on the MPFR and GMP libraries, respectively. Caveat emptor, but I'll answer emails. You will need to recompile if using something later than IDL 6.3. Examples included.

Ron Kneusel rkneusel@ittvis.com

Subject: Re: IDL is not accurate enough!
Posted by Haje Korth on Mon, 08 Sep 2008 13:45:45 GMT
View Forum Message <> Reply to Message

Ron.

that code sounds interesting. Can you provide me with a direct link to the page. The new interface is completely unusable for me and search does not give any results.

Thanks, Haje

"rtk" <oneelkruns@hotmail.com> wrote in message news:e32f4688-b58e-4f27-b2f9-17faea24285a@i24g2000prf.google groups.com...

- > On Aug 28, 2:50 pm, "Kenneth P. Bowman" <k-bow...@null.edu> wrote:
- >> Mathematica can do arbitrary-precision arithmetic ... with hundreds of
- >> digits,
- >> if necessary. Don't expect it to be fast, though, as it is all done
- >> in software, not with the hardware floating-point unit with which we
- >> normally do single- and double-precision arithmetic.
- >
- > Check on the IDL code contrib site sometime next week. I just
- > uploaded DLMs that add arbitrary precision floating point as well as
- > integer and rational types to IDL. These are wrappers on the MPFR and
- > GMP libraries, respectively. Caveat emptor, but I'll answer emails.
- > You will need to recompile if using something later than IDL 6.3.
- > Examples included.
- >
- > Ron Kneusel
- > rkneusel@ittvis.com

>

Subject: Re: IDL is not accurate enough! Posted by noahh.schwartz on Thu, 11 Sep 2008 14:10:41 GMT View Forum Message <> Reply to Message

```
On 28 août, 18:42, FÖLDY Lajos <fo...@rmki.kfki.hu> wrote:
> On Thu, 28 Aug 2008, noahh.schwa...@gmail.com wrote:
>> Hi.
>
>> I've been having problems with IDL accuracy. I'm trying to perform
>> calculations using the gamma function. The problem is that it grows
>> VERY fast! Performing this calculation in double (namely gamma(x)/
>> gamma(y) with x and y big) yields the result: NaN...
>> Would it be possible to use a program like 'Mathematica' (or any
>> other) and to plug it in my ILD program? Some kind of CALL EXTERNAL
>> that is to say. If it is possible, how can I do it and what is the
>> best program to use?
>
>> Thanks.
>> Noah
>
 gamma(x)/gamma(y) => exp(Ingamma(x)-Ingamma(y))
>
> regards,
> lajos
```

Ingamma works fine for my propose! Would you know if an equivalent function exists for the beselk function? Something like Inbeselk? beselk(x) for x>709 doesn't seen to work.

If not, I guess that I'll have to wait for the DLMs that add arbitrary

cheers,

Noah

precision floating point...