
Subject: Re: IDL is not accurate enough!

Posted by [noahh.schwartz](#) on Mon, 15 Sep 2008 09:37:01 GMT

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On 11 sep, 16:44, pgri...@gmail.com wrote:

> pgri...@gmail.com wrote:

>> noahh.schwa...@gmail.com wrote:

>>> On 28 ao t, 18:42, F LDY 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(lngamma(x)-lngamma(y))

>

>>>> regards,

>>>> lajos

>

>>> lngamma works fine for my propose! Would you know if an equivalent

>>> function exists for the beselk function? Something like lnbeselk?

>>> beselk(x) for x>709 doesn't seem to work.

>

>> Isn't 0 a good enough approximation?

>

> If not, $\log(K(x,n)) \sim \ln(\sqrt{\pi/(2*x)}) - x$ for large x

>

> Paolo

>

>

>

>> Paolo

>

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

>>> precision floating point...

>

>>> cheers,

>>> Noah

Hi Paolo,
Your approximation seems to be missing a factor? This is what IDL gives me:

```
IDL> x=705d & n=1.1 & print, alog10(besek(x,n)), (alog(sqrt(!pi/  
(2*x))))-x)  
-307.50372    -708.05331
```

Cheers,
Noah
