Subject: Re: Looking for Mittag-Leffler function
Posted by Craig Markwardt on Wed, 11 Feb 2004 21:21:04 GMT
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mzkiss@wisc.edu (Miklos Kiss) writes:
> Hi everyone! I am trying to write a code which will generate the
> Mittag-Leffler function,
>
> E_alpha(x) = sum(k = 0 to infinity) (x^k)/gamma(alpha*k + 1).
>
> There are more general cases, but in this particular application,
> x is real, and alpha is between 0 and 1. Oh, and as a special case,
> if alpha = 1, then this reduces to exp(x). My problem is that coding
> it up as is works up to a point before reaching machine limits (x^k
> for large x and large k, as well as large values of the gamma
> function), but I need solutions for large x (x >= 20).

Since your question really isn't specific to IDL, perhaps you could investigate how other authors might have done it. Possibilities to check into include special function libraries like CEPHES or the Gnu Scientific Library.

Good luck,
Craig

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Craig B. Markwardt, Ph.D. EMAIL: craigmnet@REMOVEcow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
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Subject: Re: Looking for Mittag-Leffler function
Posted by meinel on Fri, 13 Feb 2004 14:51:07 GMT
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> mzkiss@wisc.edu (Miklos Kiss) writes:
>> Hi everyone! I am trying to write a code which will generate the
>> Mittag-Leffler function,
>>

Wow, I haven't heard anyone say "Mittag-Leffler" since my days in graduate school! Could you tell us what you are using them for?

Ed Meinel