Subject: Re: Obtaining exponent from a scientific format number
Posted by Nigel Wade on Thu, 18 Apr 2002 08:41:26 GMT
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Juan I. Cicuendez wrote:

> Hi all,
>
> I have a problem and I am looking for a faster solution:
>
> I have a scientific formatted number (e.g. 6.8977653e-18) and I have
> to split the exponent and number into two parts like this:
> long:68977653
> exp:-25
> where the first factor has to be a long number and the second the
> exponent.
> The exponential factors can algo change.
>
> The solution I came up is to turn the number into strings and then
> byte(mystring), obtaining the position of '.' and 'e' and then back to
> numbers. This seems to be quite slow and since I have a large number
> of data I don't think is very efficient.
>
> Thank you very much in advance, I would appreciate any hints.
>
> Juan

How about a mathematical solution?

```
IDL> number=6.8977653d-18

IDL> digits=8
IDL> exponent=floor(alog10(number))-(digits-1)
IDL> mantissa=round(number/10.0d0^exponent)
IDL> print,exponent
       -25
IDL> print,mantissa
   68977653
IDL>
```

It won't be entirely accurate due to the use of logs and exponentiation,
but it might be close enough (I've used double everywhere to increase
accuracy).

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