Subject: Re: ROT is ROTTEN (a solution)
Posted by Martin Downing on Wed, 21 Nov 2001 21:06:52 GMT
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Wayne,
Sure, if you are doing 90-degree rotations, call ROTATE. Whether there should be a wrapper to do it for you I don't know - I think you are better being aware of what is going on. This was an issue of general rotations which was just well illustrated by 90 degree examples.

Regarding the accuracy issue, I can not reproduce your result:
IDL> print, !version

{ x86 Win32 Windows Microsoft Windows 5.5 Beta Jun 20 2001 32 64}

IDL> a = dist(2048)

IDL> print,total(rot(a,90)) - total(a)

0.000000

Martin

"Wayne Landsman" <landsman@mpb.gsfc.nasa.gov> wrote in message news:3BFBF563.2E32668E@mpb.gsfc.nasa.gov...
> Martin Downing wrote:
>
>> line 128 of rot.pro:
>>
>> from:
>>
>> theta = -angle/!radeg ;angle in degrees CLOCKWISE.
>>
>> to:
>>
>> theta = (-angle MOD 360) *acos(0.0d)/90 ;angle in degrees CLOCKWISE. (mod
>> MRD 21/11/2001 to correct for precision error)
>>
>
> That's neat how the double precision improves things. But I 'd still
> emphasize that if you are rotating by a multiple of 90 degrees then you should
> be using ROTATE() and not ROT() for two reasons:
>
> (1) ROTATE() is much faster (almost a factor of 4 on my Solaris machine)
> (2) Using ROTATE() will ensure that you have the exactly correct numbers in the

> output array (since it simply moves elements within the array and performs
no
> arithmetic operations). The improved ROT() is much better but it is not
> perfect. For example
>
> { sparc sunos unix 5.3 Nov 11 1999}
> IDL>a = dist(2048)
> IDL>print,total(a)
> 3.28828e+09
> IDL>print,total(rot(a,90)) ;use improved ROT with double precision
!RADEG
> 3.28830e+09
> IDL>print,total(rotate(a,1))
> 3.28828e+09
>
> So possibly one could add to the beginning of ROT() something like:
>
> theta = angle mod 90
> if theta EQ 0 then return, rotate(a, theta/90)
>
> although one needs to also worry if the user has also set the
magnification or
> pivot keywords
>
>
> --Wayne Landsman landsman@mpb.gsfc.nasa.gov
>
