Subject: IDL FFT vs MATLAB FFT
Posted by Randall Skelton on Tue, 08 Oct 2002 17:35:09 GMT
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Argh.... it is a bad day when I need to sort out both Matlab's and IDL's FFT functions...

Assuming that, IDL's FFT function uses a one-sided format, and divides by N on the forward transform and MATLAB's FFT function uses a one-sided format and divides by N on the inverse transform, I still am having difficulty comparing the FFT results from each.

In Matlab:

```
>> fft(eye(4))

ans =
   1.0000    1.0000            1.0000    1.0000
   1.0000    0 - 1.0000i  -1.0000    0 + 1.0000i
   1.0000   -1.0000            1.0000   -1.0000
   1.0000    0 + 1.0000i  -1.0000    0 - 1.0000i
```

```
IDL> print, 4*fft(identity(4),/double)
 (1.0000000,0.0000000) (0.0000000,     0.0000000) (0.0000000,0.0000000) (0.0000000,
0.0000000)
 (0.0000000,0.0000000) (0.0000000,-3.0628711e-17) (0.0000000,0.0000000)
(1.0000000,3.0628711e-17)
 (0.0000000,0.0000000) (0.0000000,     0.0000000) (1.0000000,0.0000000) (0.0000000,
0.0000000)
 (0.0000000,0.0000000) (1.0000000,-3.0628711e-17) (0.0000000,0.0000000)
(0.0000000,3.0628711e-17)
```

Can someone please explain how and why these are different?

Many thanks,
Randall