Subject: Re: FFT help
Posted by Timm Weitkamp on Fri, 05 Nov 2004 15:31:17 GMT
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Today at 08:43 -0600, Kenneth Bowman wrote:

> [...]
>
> This function
>
> COS(!PI*x/6.0)
>
> is only a small part of a complete cosine wave and has a jump
> discontinuity at the ends. (Try plotting it.)

Mhm, but the discontinuity can be avoided if you use a grid that takes an integer number of periods of your function, for example:

```
IDL> x = findgen(120)
IDL> y = 8 * cos(2*!pi*x/6)
IDL> ft = fft(y)
IDL> plot, abs(ft)
```

The result is pretty much what the original poster expected to get: two peaks with values of exactly 4, at positions of 20 (=120/6) and 100 (the mirrored peak -- see the online help for FFT for how the frequencies are ordered in the output of FFT) on the frequency axis.

Good luck
Timm

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