Subject: Re: FFT of gaussian Posted by Gray on Wed, 12 Jan 2011 17:42:03 GMT

View Forum Message <> Reply to Message

```
On Jan 12, 9:28 am, "Kenneth P. Bowman" <k-bow...@null.edu> wrote:
> In article
 < e8f1db77-67a5-491f-9671-fbd85c50a...@a10g2000vby.googlegroup s.com >,
  Gray <grayliketheco...@gmail.com> wrote:
>> Hi all.
>
>> Here's something I don't really understand. The Fourier transform of
>> a Gaussian function is another Gaussian... so why if I create a
>> Gaussian and run FFT do I not get a Gaussian? Is it because my
>> Gaussian vector is discrete? How can I fix this?
  You get the discrete transform of a discrete approximation to
  a Gaussian, which is also a discrete approximation to a Gaussian.
>
 Try this:
>
> IDL> x = -5.0d0 + 0.1d0*dindgen(101)
> IDL> y = exp(-(x^2))
> IDL> plot, x, y
> IDL> yt = fft(y)
> IDL> plot, shift(abs(yt),50)
  Don't forget, the IDL always does a full complex FFT.
> Ken Bowman
```