

# Re: Fourier transform and oscillation amplitude

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- *From:* "Pygmalion" <[marko@xxxxxxxxxxxxx](mailto:marko@xxxxxxxxxxxxx)>
  - *Date:* 11 Dec 2006 07:17:02 -0800
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Randy Poe je napisal:

Pygmalion wrote:

If "mm" means "millimeters", that sounds like a strange unit for a Fourier transform.

Why? I am doing a FT of a real signal.

You are looking at a signal with some bandwidth. You could estimate the total energy in that signal by adding up the energy at each discrete frequency point in the signal (energy is magnitude squared of the FT). This would be the same as the total energy of your original signal.

However, since you have a signal with bandwidth, the relationship between amplitude and energy is not so simple, without additional information. Is it a constant amplitude signal for instance? Is this just a pure sine wave that got spread because the time window was not an integral number of periods?

Well it is almost sinusoidal signal. But because it is not perfect, frequency range has dispersed from one value to many values. Window is an integral number of periods, I use DFT instead of FFT in order to ensure that.

Also, if 40 mm represents a peak, what is a correct name the whole structure?

I've heard "peak". "There is a broad peak at 50 kHz, and a very sharp peak at 35 kHz..." I don't know if there's any formal word in common usage.

Re: Fourier transform and oscillation amplitude

Thanks for the answer, Marko.

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