
Subject: Re: FFT function

Posted by [steinhh](#) on Thu, 27 Aug 1998 07:00:00 GMT

[View Forum Message](#) <> [Reply to Message](#)

In article <6s38jm\$2br\$1@news.lth.se> "Jonas" <jonas_2@hotmail.com> writes:

- > Anyone knows of differences in different fft algorithms? How should I
- > perform the scaling? I need a standard scaling value that allways can be
- > used, not depending of the maximum pixel values in each image.

Various types of normalizations are applied in various "flavours" of FFT implementations. Common to most of them is the fact that the normalizations even out when doing a forward, then backward transform (you get back the original data).

In IDL the **forward** transform (note: "direction" = -1) is normalized by a factor of 1/N (N is the number of points), while the **reverse** transform is **not** normalized. I suspect you may have swapped the definitions?

E.g.,

```
IDL> f=findgen(100)
IDL> print,max(imaginary(fft(f,1)))
      1591.03
IDL> print,max(imaginary(fft(f,-1)))
      15.9103
```

Some flavours do it the other way around, and some flavours normalize with 1/sqrt(N) both ways, to keep the symmetry (I'm a fan of symmetry...:-)

Regards,

Stein Vidar
