Subject: Re: FFT-bug???? (PV-Wave)

Posted by steinh on Wed, 19 Nov 1997 08:00:00 GMT

In article <879843126.431506@curry.top.tld>
Franz.Dollinger@mchp.siemens.de (Franz Dollinger) writes:

> The absolute value is identical for Fortran and PV-Wave, but the
> phase of the PV-Wave output is wrong.

This may simply be a different convention as to what is regarded
as the "central pixel" in the (periodic!) pattern that you are
FFT'ing.

E.g., given an array a = fltarr(128), IDL will consider the a(0)
as the "central" pixel (the pixel at the "origin") - thus a
discrete "delta function" would be represented by

```
a = fltarr(128)
a(0) = 1.0
```

Analogously, the zero frequency component of an FFT (in IDL) is
stored in a(0).

I suspect that some libraries implementing FFT has diverging
definitions - e.g., regarding a(63) as the central element (but
still storing the zero *frequency* component in a(0) - ??)

Depending on the exact definition, such a difference may cause
only the phase of a transform to be wrong (since the original
data seems to have been shifted).

Regards,

Stein Vidar