Subject: Re: FFT-help!
Posted by Paul van Delst on Fri, 30 Jun 2000 07:00:00 GMT
View Forum Message <> Reply to Message

Rachel wrote:
>
> Hi, I am a new IDL user and I am struggling with the FFT function. Given an
> array with periodic data, (intensity vs. time), I want to find the fourier
> transform (and thereby find the frequency).
>
> thanks,
>
> bridget

Check out the fft wrappers I wrote on my website at

http://airs2.ssec.wisc.edu/~paulv/#idl

and click on the "Spectral" link. Have a gander at the fft_to_interferogram.pro (spectrum->IFG) and fft_to_spectrum.pro (IFG -> spectrum) - and associated - routines. The routines are for FFTing spectra of atmospheric IR emission but ideally it shouldn't matter what the input x/y values are (yeah, right!). I spent a lot of time agonising over how to reduce the ringing introduced by truncation (also known as Gibbs phenomena) and decided that that was best handled separately by users before FFTing. Everyone has their favourite apodisation functions. (I use a cosine rolloff filter or a Strong-Beer depending on my mood :o)

Hope they're somewhat useful.

cheers,

paulv

p.s. The fft_to_interferogram returns a shifted double-sided IFG since that is more like what an actual interferometer would measure, thus the fft_to_spectrum can handle both simulated and real data.

--
Paul van Delst Ph: (301) 763-8000 x7274
CIMSS @ NOAA/NCEP Fax: (301) 763-8545
Rm.202, 5200 Auth Rd. Email: pvandelst@ncep.noaa.gov
Camp Springs MD 20746