Subject: IDL 5.5, 2D FFT indexing confusion.
Posted by Pitufa on Tue, 19 Jul 2005 11:23:22 GMT
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Hi,

I have been trying to generate an real even function in fourier space that I can INVERSE FFT in order to get a function which has no imaginary part. I have no problems when the function is a vector, but I get an imaginary part when it is a two dimensional array.

Below is the test program that shows my problem. Am I defining wrong the variables 'centre' or 'nshift'?

I would be really grateful if someone could let me know what I am doing wrong.

Thanks!

Pitufa.

```
pro test_index

 npix   = 100
 centre = npix/2.d - 1.d
 nshift = npix/2 + 1

;1d example:

f    = abs(findgen(npix) - centre)
ifft = fft(shift(f,nshift),1,/double)

print,'1D: Imaginary maximum:', Max(Abs(Imaginary(ifft)))
print,'1D: Real maximum     :', Max(Abs(Double(ifft)))

;2d example:

;angle of position vector w.r.t x axis:

phi = dblarr(NPIX,NPIX)
FOR X = 0, NPIX-1 DO FOR Y = 0, NPIX-1 DO $
PHI[X,Y] = ATAN(Y*1.D - centre,X*1.D - centre)

TEST     = sin(2.d*phi)
IFFTTEST = FFT(SHIFT(TEST,nshift,nshift),1,/DOUBLE)

print,'2D: Imaginary maximum: ', $
 MAX(ABS(imaginary(IFFTTEST))),mean(ABS(imaginary(IFFTTEST)))
```

```
print,'2D: Real maximum      : ',MAX(ABS(double(IFFTTEST)))

end
```