

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
```
