
Subject: Re: FFT+inverse FFT

Posted by [lecacheux.alain](#) on Mon, 06 Dec 2010 15:10:24 GMT

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On 6 déc, 15:16, Jeremy Bailin <astroco...@gmail.com> wrote:

> On Dec 5, 12:48 pm, Natalya Lyskova <natalya.lysk...@gmail.com> wrote:

>

>

>

>

>

>> Hey! I'm a beginner at IDL and have problem with FFT. I'm trying to
>> perform 2d-FFT but the code doesn't work properly even on test images.
>> So I create an image, make the Fourier transform, then the inverse
>> Fourier transform and finally I expect to get the initial image. But
>> the resulting image is the initial one, reversed with respect to the
>> center.

>

>> My code:

>> nx=256L

>> x1=findgen(nx)-nx/2.0+1.0

>> x2=findgen(nx)-nx/2.0+1.0

>

>> ytest=fltarr(nx,nx)

>> for i=0l,nx-1 do begin

>> for j=0l,nx-1 do begin

>> if (x1[i] le 20.0 and x1[i] ge 0.0 and x2[j] le 20.0 and x2[j] ge
>> 0.0) then begin

>> ytest[i,j]=1.0

>> endif

>> endfor

>> endfor

>

>> ; So the initial image is a square in the right upper corner

>

>> FFTtest=FFT(ytest)

>> sh_FFTtest=SHIFT(FFTtest,nx/2.0-1.0,nx/2.0-1.0)

>> inv_test=FFT(FFTtest,-1)

>

>> ;The result is the square in the LEFT LOWER corner.

>

>> I would be very grateful for comments/advice/solutions

>

>> Thank for help,

>> Natalya

>

> As a side note, a better (both faster and more readable) way of
> creating the original image instead of the double FOR loop is:

```
>  
> if (x1[i] le 20.0 and x1[i] ge 0.0 and x2[j] le 20.0 and x2[j] ge  
> 0.0) then begin  
>   ytest[i,j]=1.0  
>  
> upperright = where(x1 le 20.0 and x1 ge 0.0 and x2 le 20.0 and x2 ge  
> 0.0, nupperright)  
> if nupperright gt 0 then ytest[upperright]=1.0  
>  
> -Jeremy.- Masquer le texte des messages précédents -  
>
```

Even simpler since IDL 8.0:

```
ytest[where(x1 le 20.0 and x1 ge 0.0 and x2 le 20.0 and x2 ge 0.0, /  
NULL)]=1.0
```

alx.
