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Subject: fft and least squares problem

Posted by [rogass](#) on Tue, 14 Aug 2012 14:06:53 GMT

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Hi Folks,

I try to estimate the subpixel shifts if an image is compared with its shifted representation, but something is going wrong. Maybe somebody can help me.

```
s=size(im,./dim)*1.
im1 =im
dx=.25
dy=.3
im2=image_shift(im1,dx,dy);more precise then
interpolate(im,findgen(s[0])+dx,findgen(s[1])+dy,./grid,./cubic)
fim1=fft(im1,-1)
fim2=fft(im2,-1)
corr=fim1*conj(fim1)/abs(fim1*fim2)
corr=shift(corr,s/2)
phase=atan(imaginary(corr)/real_part(corr))
wx=(findgen(s) mod s[0])*2.*!pi/s[0]
wy=(rebin(findgen(1,s[1]),s))*2.*!pi/s[1]
r=5;fitting radius
phase2=phase[s[0]/2 - r : s[0]/2 + r,s[1]/2 - r : s[1]/2 + r]
wx2=wx[s[0]/2 - r : s[0]/2 + r,s[1]/2 - r : s[1]/2 + r]
wy2=wy[s[0]/2 - r : s[0]/2 + r,s[1]/2 - r : s[1]/2 + r]
print,la_least_squares(transpose([wx2[*]],wy2[*])),phase2 [*])
```

The last line should give dx and dy but its erroneous. I don't really know why!

Thanks in advance

CR

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