Gray wrote:
> Hi all,
>
> Maybe my calculus is screwy, but this doesn't make sense to me.
> Here's my issue:
>
> I have two astronomical images (of stars).  I've fit an average PSF as
> a Moffat profile for each of the two images.  I want to find the
> optimal convolution kernel to match the two psfs, so I call on my old
> friend Mr. Fourier.  If MA is the Moffat profile for image A and MB is
> the Moffat profile for image B (both 2d), and K is my optimal kernel,
> then I can do this:
>
> MA ** K = MB --> ** is convolution in this scenario
> F(MA**K) = F(MB)  -->  F() is the Fourier transform
> F(MA) * F(K) = F(MB)
> K = F^-1(F(MB)/F(MA))
>
> With me so far?  So I do this in IDL.
> IDL> ma = moffat(params_a)
> IDL> mb = moffat(params_b)
> IDL> fma = fft(ma) & fmb = fft(mb)
> IDL> k = fft(fma/fmb,/inverse)
> IDL> mc = convol(ma,k)
>
> What I get, however, is that MC is a 2d delta function.  Why...?  It
> happens with 2d Gaussians, as well.  Thanks for your help!
>
> --Gray
In principle, your approach is right. First of all make sure the PSF MA is wider
than MB otherwise deconvolution won't give anything meaningful. Furthermore,
deconvolution of real images is tricky because of the presence of noise. I guess
you want to match the PSFs to do image subtraction. If so this paper might
provide some more information on the subject (in fact I think it describes the
most sophisticated method at present)

 http://esoads.eso.org/cgi-bin/nph-data_query?bibcode=2008MNR
AS.386L..77B&db_key=AST&link_type=ABSTRACT&high= 44a4d6a73417468

The author provides the IDL code (http://www.danidl.co.uk/index.html) provided
you pay the subscription rate.

You may try the ISIS code for free (http://www2.iap.fr/users/alard/package.html).

# Bringfried