Subject: Re: Scale the psf on images.
Posted by rryan%stsci.edu on Mon, 12 Jan 2015 12:57:32 GMT
View Forum Message <> Reply to Message

Yes and no... You've stumbled onto a fairly tough problem and if my simple thing from before doesn't work, then you're unlikely to find anything that you'll get in place for this upcoming run. Again, the simple thing I outlined is mathematically correct and is exactly what you're after in the case of continuous functions without noise (and probably some other conditions as well). Well, you don't have that, so don't expect much success (though it does work in certain cases, like high signal-to-noise, well-sampled PSFs).

If you've got a lot of time and/or are very worried about this, you can look into the code which forms the basis for many ground-based pipelines (I think LSST uses a variant of this code):

http://www.astro.washington.edu/users/becker/v2.0/hotpants.h tml

But every time I try this, I run into problems. So, good luck --- you'll need it. Another trick you can exploit, is to remember the definition of these functions and not work in fourier space, but work in image space. I've never tried anything like Mats' suggestion, but give it a go...

But, just out of curiosity... how different are the PSFs? Can you represent them by analytical functions (such as Gaussian or Moffat)?

R

On Monday, January 12, 2015 at 9:15:23 AM UTC+1, anes.tz...@gmail.com wrote:
> Hi
>
> I would like to perform a live test during an upcoming observing run. I want to take a series of frames on various sources and check for variability on them. I would like to make the image subtraction as accurate as possible, thus I think that image subtraction should take place after the psf of the frames is matched.
>
> Which technique you think is the best? I tried with the convolve script but the result is not good.
>
> imconv = convolve( image1, image2, FT_PSF = psf)
>
> image 1 the science frame and image is the psf frame that I created through iraf.
>
> Any suggestions are appreciated
>
> Thanks a lot.