Subject: Re: computation time for convolution
Posted by wlandsman on Wed, 09 Jul 2014 16:48:26 GMT
View Forum Message <> Reply to Message

It looks like the FFT calculations are giving double precision output. I believe this is a bug -- they should not give double precision output when all inputs are floating point. I've updated http://idlastro.gsfc.nasa.gov/ftp/pro/image/convolve.pro so that it no longer does this. It is curious that the standard IDL routine CONVOL_FFT seems to have the same problem.

Both FFT routines will run much faster by using the /NO_PAD keyword, though this can give spurious results near the edges. Conversely, the standard convolution CONVOL() seems to run much slower when using one of the EDGE_* keywords.

Having said this, yeah I don't understand why IDL CONVOL() is so fast -- or conversely why IDL FFT() is so slow. --Wayne

On Wednesday, July 9, 2014 4:12:30 AM UTC-4, fraro...@yahoo.it wrote:
> I am a little puzzled about the computation time required by different convolution routines. I need to compute several times the convolution of large arrays and I always used the convolve routine of the astrolib. Since I need to speed up the processing I compared the computation time for array of different size (but using sizes power of 2, which should be the best case for FFT) convolved with different routines. The best result (by far) is obtained with the function convol of the IDL standard library, the worst is convol_fft and convolve is somewhat in the middle. This does not make sense to me, I was sure that the FFT approach is the fastest. What am I missing or doing wrong?