Subject: Re: ratio imaging Posted by gerhard.holst on Wed, 13 Mar 2002 12:39:44 GMT View Forum Message <> Reply to Message Dan Larson <drl16@cornell.edu> wrote in message news:<MPG.16f7fce19edad53f989684@newsstand.cit.cornell.edu>... > In article <9fe17a3c.0203120028.1a7caf67@posting.google.com>, > gerhard.holst@pco.de says... >> Craig Markwardt <craigmnet@cow.physics.wisc.edu> wrote in message news:<on1yev3r9q.fsf@cow.physics.wisc.edu>... >>> Dan Larson <drl16@cornell.edu> writes: >>>> I am trying to do simple ratiometric >>> imaging with IDL. Of course, since >>>> there is some pixelation noise, the >>> ratio is not very robust. I have >>> experimented with a number of >>> different filters (median, Gaussian >>> deconvolution, smooth) to try and >>>> remove some of this instability. >>>> Is there a filtering technique which >>> is minimally perturbative that will >>>> remove some numerical artificats >>>> without changing the boundaries of >>>> objects? >>>

>>> Dan, you should be filtering the two images, *before* computing the

>>> ratio, right? I would have said that goes without saying, but now I >>> am saying it. [The reason of course is that the ratio does not have >>> a nice compact statistical distribution, so averaging is less >>> robust.] >>> >>> Craig >> >> Dan,

>> if your are looking for more edge preserving filters you might

>> search for topics like "Savitzky-Golay" and "LOESS", both are

>> filters that might consume a little more time in calculation

>> (especially the LOESS I have found on the web, if you are interested

>> I can look for the link), but they do a good job in smoothing

>> while edge keeping, much better than boxcar, median etc.

>> >> Gerhard >> > Gerhard,

>

> I am familiar with the Savitzky-Golay filter, but I have never used

> the LOESS filter. If you have an implementation that you like, I

> would like to hear about it. Do you know what the acronym stands

- > for?
- >
- > Dan

Hi Dan,

to my knowledge it stands for an old German geological term, it is no acronym, there is also a filter called Lowess very similar to that. I have found the origin of the LOESS routines in IDL that I use, they were developed by H. Freudenreich.

http://www.astro.washington.edu/deutsch/idl/htmlhelp/slibrar y14.html There is also the source for his routines based on a library from AT&T Labs. I have attached 2 files (pdf&ps) that give some background on the filter. If you use the Loess routine of Freudenreich, keep the pixelwidth odd, otherwise you'll get error messages, if I remember correct.

Gerhard