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Subject: hot pixels

Posted by [Helder Marchetto](#) on Sat, 17 May 2014 09:15:13 GMT

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Hi,  
I've had a look at this post ( <https://groups.google.com/d/msg/comp.lang.idl-pvwave/GFHtWjsbfP0/wOqkGNcDJlgJ>), but could not make up my mind on how to tread this. I have a detector giving some intensity per pixel in, say, unsigned integer (up to 65535). There are a few pixel that are stuck at 65535. The thing I want to do is not only to display the image (I can substitute the pixel with some interpolation, average, ..., of neighbor values), where it is not crucial what value I use (given enough pixel, it is difficult to tell the difference between one method or the other), but also to do some sort of image alignment based either on phase correlation (FFT) or the NASA `correl_optimize`. Either method, I would like to get the "best" result, meaning disregarding those hot pixels. As far as I know, FFT and `correl_optimize` have no option for bad data, therefore I have to replace this data in the most feasible way (not changing the data would mean I get no shift between the images because these pixels don't move...).

A further complication is that in a few cases, these pixels are also neighbors. That makes things harder...

Any suggestions or indication where to find more info on how to get a better estimation is greatly welcome.

Thanks,  
Helder

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Subject: Re: hot pixels

Posted by [Craig Markwardt](#) on Sun, 18 May 2014 16:46:28 GMT

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On Saturday, May 17, 2014 5:15:13 AM UTC-4, Helder wrote:

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> I've had a look at this post ( <https://groups.google.com/d/msg/comp.lang.idl-pvwave/GFHtWjsbfP0/wOqkGNcDJlgJ>), but could not make up my mind on how to tread this. I have a detector giving some intensity per pixel in, say, unsigned integer (up to 65535). There are a few pixel that are stuck at 65535. The thing I want to do is not only to display the image (I can substitute the pixel with some interpolation, average, ..., of neighbor values), where it is not crucial what value I use (given enough pixel, it is difficult to tell the difference between one method or the other), but also to do some sort of image alignment based either on phase correlation (FFT) or the NASA `correl_optimize`. Either method, I would like to get the "best" result, meaning disregarding those hot pixels. As far as I know, FFT and `correl_optimize` have no option for bad data, therefore I have to replace this data in the most feasible way (not changing the data would mean I get no shift between the images because these pixels don't move...).

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> Any suggestions or indication where to find more info on how to get a better estimation is greatly welcome.

If you replace the "bad" pixels with the mean pixel value, those values should be effectively ignored by an FFT. By "mean pixel value" I mean the mean value of all "good" pixel values.

Craig

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