
Subject: Re: Butterworth Band-Pass Filter
Posted by [burton449](#) on Sun, 12 Dec 2010 16:29:32 GMT
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On Dec 11, 11:37 pm, David Fanning <n...@dfanning.com> wrote:
> burton449 writes:
>> as mentionned in the topic, i want to do a Butterworth Band-Pass
>> Filter on a 9166 X 4600 pixels image.
>
>> The doc of butterworth.pro in the astrolib explain how to use the
>> script for a lowpass filter, but not for a band-pass and a high-pass.
>
>> Have any idea how to do?
>
> You need to read my new book. In the meantime, you
> can find an explanation here:
>
> http://www.dfanning.com/ip_tips/freqfiltering.html
>
> This describes a low-pass filter, but the equation for
> the high-pass filter is there, too. Just replace the
> low-pass filter with the high-pass version. :-)
>
> Cheers,
>
> David
>
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming:<http://www.dfanning.com/>
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Thank you again David for your help,

According to your documentation, a high-pass butterworth filter will be defined like that:

$$\text{filter} = 1 / [1 + C(R_o/R)^{2n}]$$

So in IDL, for a cutoff of 15, and `freqImage = FFT(image, -1)`, the filter will be defined like that:

$$\text{filter} = 1.0 / (1.0d + (15.0/\text{freqImage})^2)$$

Is it right?

Thanks again

Max
