
Subject: Re: Problem discovered in bandpass_filter.pro
Posted by [chris_torrence@NOSPAM](#) on Tue, 01 Dec 2015 19:16:48 GMT
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Hi,

This turned out to not be a bug. Inside bandpass_filter (and bandreject_filter) we are using three different formulas: one for low-pass, one for high, and one for bandpass. For example, for the lowpass filter, you want the filter to include all of the frequencies near zero, and then gradually fall off as you get to the high-frequency cutoff. However, for the bandpass filter, *regardless* of the low-pass frequency (even if it is very close to 0), you want the response function to gradually increase from 0 to 1, and then back down to 0.

These formulas can all be found within:
Gonzalez, R.C., and R.E. Woods. Digital Image Processing, 3rd edition. Pearson Education, Upper Saddle River, New Jersey, 2008.

I've gone ahead and updated the IDL documentation to include the correct formulas, as well as some better graphs and examples.

Thanks for reporting this!

-Chris
