
Subject: Re: detrend

Posted by [Craig Markwardt](#) on Sun, 06 Jun 2010 05:19:27 GMT

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On Jun 5, 10:50 pm, Jenny <env...@yahoo.ca> wrote:

> Dear All,

>

> I'm looking for an IDL routine to apply detrend on time series

> data. Any ideas?

It really matters a lot what kind of detrending you want to do, and how you expect it to affect your data. There is a fine line between "detrending" your data, and removing the real signal. Basically any type of detrending will involve a filtering step and a removal step. The filtering step is key, because it determines how much signal is removed.

For reasonably regularly sampled data where you are interested in the high frequency variations, you could do a high-pass filter,

Y = ... original data ...

Y_SMOOTH = smooth(Y,10,/edge) ;; Smoothed version (smoothed over 10 samples)

Y_DETRENDED = Y - Y_SMOOTH ;; High-pass version

If you want to remove a linear trend, the filtering step could be a linear least squares fit,

AB = LINFIT(X,Y) ;; Fit linear trend

Y_DETRENDED = Y - AB[0] - AB[1]*X ;; Remove linear trend

More sophisticated analysis would add error bars; or a higher order polynomial fit with POLY_FIT() if appropriate.

Good luck,
Craig
