Subject: wavelet spectra help
Posted by rickeym on Mon, 06 Oct 1997 07:00:00 GMT
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The matlab wavelet toolbox documentation and examples do not describe how to form wavelet spectra from a time series. The way I do spectra using the wavelet toolbox is as follows:

1. I call cwt.m to get the wavelet coefficients.

2. I then form a new matrix of abs(coefs)^2 to get the wavelet energy density at a given location in wavelet space.

3. I use the morlet wavelet, so i can find the frequency = 1./scale. Where scale is returned by cwt.m.

4. If a contour plot is made of the wavelet energy density, where the x axis is time and the y axis is frequency, the plot indicates wavelet energy density as a function of freq and time.

5. If I take a vertical cut through the plot in part 4, and plot wavelet energy density (y axis) versus frequency (x axis) does this represent a local spectra?

Is the above procedure esentially correct? Does anyone have any IDL code to check these results? Any suggestions greatly appreciated.
Thanks!

Rick McDaniel