CDFSPEC

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This is a Matlab gui interface to power spectral routines that lets the user choose various options, such as piece length, frequency band averaging, variables etc. The present version is restricted to data stored in netcdf format and, more particularly I believe, to the conventions used in the USGS/WHOI implementation. It should work with data downloaded in that format from the new WHOI website: http://peripli.whoi.edu/~netguest/AVBUOY/BUOY01/BGTS.html. I have included several time series with the files for you to play with.

The program is started by typing “cdfspec” at the command line and then picking the two netcdf files that you want from the “Files” menu at the top of the figure. Subsequently, information about these files can be obtained from the “Fileinfo” menu - it is shown on the title bar of the plot and printed in the command window.

Options are chosen mainly from a series of pushbuttons, listboxes etc down the right hand side of the figure window. Starting at the top and clicking these:

- Box 1: determines whether you are dealing with the left (L) or right (R) panels of a vertically split display.
- Boxes 2&3: gives you the option of choosing which variables you want for "L" and "R". Note that "a" stands for anticlockwise and "c" for clockwise (formed by u+iv and u-iv).
- Box 4: this will rotate velocities into bathymetric coordinates using the m_map toolbox and the 5 minute topography provided with it - it won't work if you don't have it.
- Boxes 5&6: allows you to change the file spec from *.cdf to something more specific. Doesn't seem to work very reliably.
- Box 7: allows you to choose the number of points in each piece.
- Box 8: allows you to choose how finely to frequency average: the larger the number the finer the resolution. The default is no frequency band averaging.
- Box 9: allows you to toggle between loglog and variance preserving displays.

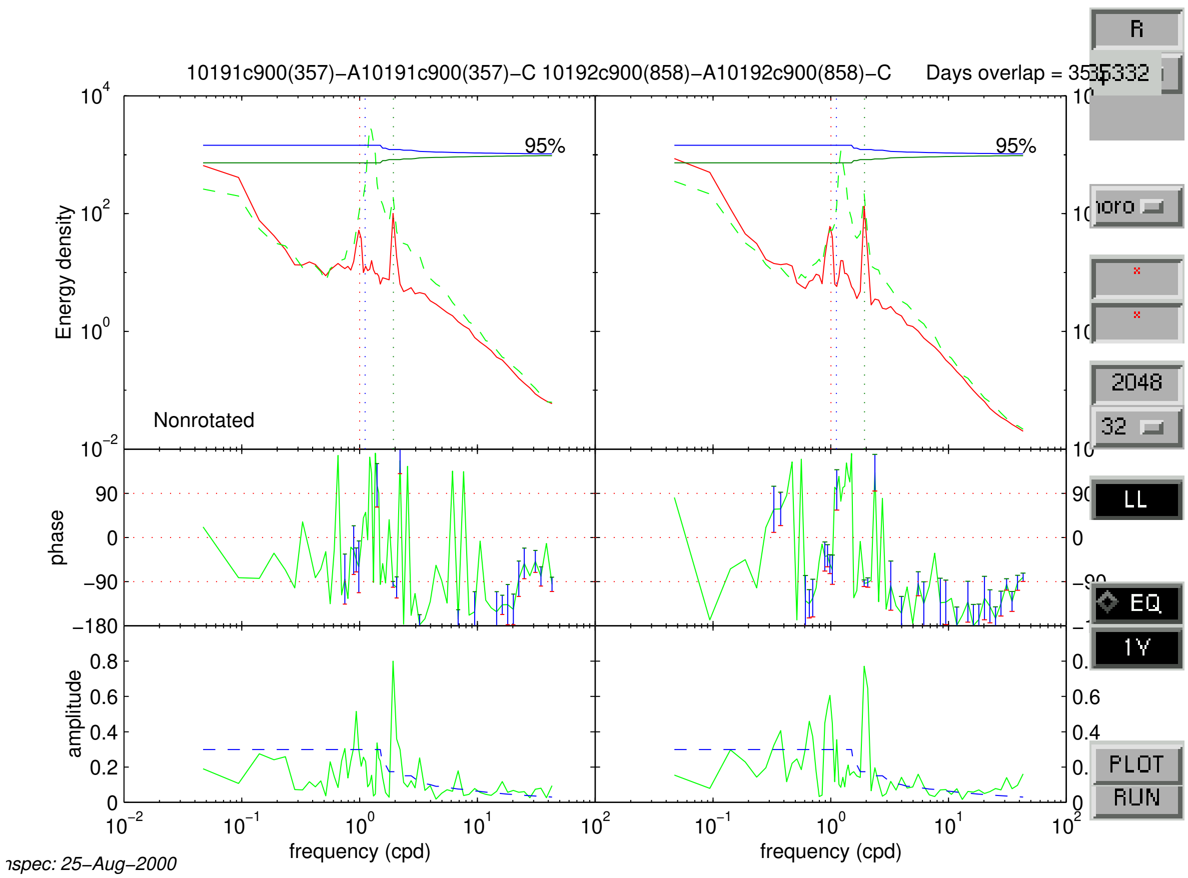

Figure 1: A sample cdfspec window showing power density, coherence and phase for the rotary components of 2 different time series.

- Box 10: if chosen makes the axis equal for L & R displays.
- Box 11: allows you to specify that the variables be plotted on 2 different axes (e.g. for mixed variables.
- Box 12: will produce a time series plot of the chosen variables.
- Box 13: will generate the power spectrum.