Class exercises:

Read in the three components of TUL1, cut it between 1200 and 1800 and then plot together in one plot in color.

Read in the N and Z components of the india earthquake, plot in color on one plot. What do you notice about the relationship between the two traces?

Read more the E component and replot the three in color on one plot. What do you notice about the relationship between the third trace and the first two?

Read in the Z component of the Solomon earthquake. Cut it around the surface waves (for this you will have to plot it, select a window, cut about the window, re-read it, plot it to check, then take the FFT and plot it with PSP, then UNWRAP it and plot it with PSP.

Generate a set of impulses, save to disk, generate single impulse and apply transfer to DWWSSN, wave to disk, read DWWSSN impulse response, read set of impulses, and correlate.

Read Solomon Z component, integrate it and plot it, now remove the mean, integrate again and plot it(you also have to re-read it first as the integration trashed the original seismogram), next remove the trend, integrate again, and plot it.

Repeat the above, but this time differentiate it.

Correlate the Solomon or Sumatra Z component. Remove the trend and correlate again.

Read the station pair WRAK and SCIA (check the file names as some stations have 2 copies – one has a “..” after the station name and the other has a “.HR.”, take the one without the HR) and correlate them (don’t forget to remove the trend).

Try hanning windowing with different widths.

Read a seismogram and do the Hilbert transform and plot the original seismogram plus the “envelope” of the seismogram.