Homework 3

Homework 3 is due on 11.55 p.m. 18th September, 2018. Deadline extension requests will not be entertained. You are to create a pdf file with the necessary figures and text. Figures should be generated in jpg or gif format (see next slide) and should be legible.

You have to submit the assignment **individually**.

Saving plots in SU

- You should save plots in .ps and jpg format, with labels:
- suwind < vikinggraben.su key=cdp min=450 max=450 > cdp450.su
- suxwigb < cdp450.su key=offset label1="Lag (s)" label2="Offset (m)" title="Viking graben, CDP450" perc=99 & ——- **Plot** *wiggle plot* with labels, with percentile clip
- supswigb < cdp450.su key=offset label1="Lag (s)" label2="Offset (m)" title="Viking graben, CDP450" perc=99 > wiggle_cdp450.ps ——- **Save** *wiggle plot* with labels, with percentile clip
- suximage < cdp450.su label1="Lag (s)" label2="Trace" title="Viking graben, CDP450" perc=99 & ——- **Plot** *image plot* with labels, with percentile clip
- supsimage < cdp450.su label1="Lag (s)" label2="Trace" title="Viking graben, CDP450" perc=99 > image_cdp450.ps ——- **Plot** *image plot* with labels, with percentile clip

  You can export the .ps file to jpg format, in the following fashion:

- convert image_cdp450.ps image_cdp450.gif —- **Convert** postscript to gif format
- convert image_cdp450.ps image_cdp450.jpg —- **Convert** postscript to jpg format

Autocorrelation

1. Plot the autocorrelation of *gained and statics corrected* near trace gather and the 3 CDP gathers. Do you observe any multiples?

2. Explain how the command sushape works? Hint: consult lab notes.
   Now compare the ntg in time and frequency domain before and after minimum phasing

3. Compare the min. phased wavelet with the resampled wavelet in time and frequency domain
   and bring out the observed differences in amplitude and phase spectrum. Hint: use suamp mode=amp for amplitude spectrum and suamp mode=phase for phase spectrum

Viewing Autocorrelation

SU plots both positive and negative lags of autocorrelation. In order to view the correlogram correctly, you will have to specify the axis labels.

The following command shows how to plot the
autocorrelogram with 151 lags and sampling period 4 ms

```
suacor ntout=151 < data.su | suxwigb title="Autocorrelogram”
label1=“lag (s)” label2 = “trace” f1=-0.3 &
```

The above command should output an autocorrelogram with
lags ranging from -0.3 to 0.3 s.

You will need to modify the above command accordingly. Note that you will need to include sufficient number of output lags so that multiples are visible!