Homework 1

Homework 1 is due on 11.55 p.m. 7th August, 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 can save plots in .ps and jpg format, with labels. Following is an example:
- suwind < vikinggraben.su key=cdp min=450 max=450 > cdp450.su
- suxwigb < cdp450.su key=offset label1="Time (s)" label2="Offset (m)" title="Viking graben, CDP450" perc=99 & ——- **Plot** *wiggle plot* with labels, with percentile clip
- supswigb < cdp450.su key=offset label1="Time (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="Time (s)" label2="Trace" title="Viking graben, CDP450" perc=99 & ——- **Plot** *image plot* with labels, with percentile clip
- supsimage < cdp450.su label1="Time (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

Homework 1
Seis See

1. Populate the following headers absent in the viking graben data file:

    - Inline number (=20, arbitrary constant)
    - Crossline number (= shot point number)
    - CDP-X, CDP-Y

    Generate an excel sheet with all the headers, plot the stacking chart. What is the maximum and minimum fold in the data?

2. Generate near trace gather, take a screenshot. Identify a simple multiple of the sea bottom. The sea bottom reflection appears around 0.5 s.

3. Plot the spectrum of the near trace gather, save a figure.

Seismic Un*x

1. Generate near trace gather, save a figure.

2. Extract any 3 CDP gathers with maximum fold and plot them, save a figure

3. Apply the following gain functions separately to near trace gather and the CDP gathers, save figures:

    i) AGC. (experiment with several windows and pick one which you like the best).

    ii) t^2 gain.

- Which gain function improves the display?

- Tip: suximage is better suited to display data than suxwigb when there are a large number of traces to plot.

- You are required to type *all the commands* that you used along with the corresponding figures