Lab 4

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Processing flow

- In order to maintain clarity, you could adopt a naming convention. For example:

  - Reading the data, geometry, sorting — ntgather.su

  - Amplitude gain — agc_ntgather.su

  - Statics — stat_agc_ntgather.su*

Processing flow

- Reading the data, geometry, sorting

- Amplitude gain

- Statics

- Deconvolution:predictive and spiking

- We ==will do decon for ntg and the 3 CMP gathers== (from homework 1. **Caution!** Make sure that the CMP gathers are also being brought through the same Processing Flow as the ntg

Predictive error filtering (pef)

- Before you attempt pef, download all the files in "Decon_tutorial" from moodle into a single folder in your working directory, for e.g."Decon_tutorial" then go to the folder.

- Open the shell script "minphs_pred_decon.sh" in a text editor. Can you figure out what the shell script does?

- To run the shell scripts, type the following command:

- bash minphs_pred_decon.sh

You should see a number of figures (with captions below) which illustrate the working of pef on some synthetic data.

Pef tutorial

- Examine the file "minphs_pred_decon.sh" in a text editor. Notice lines 28 and 29 of the script. There are two parameter definitions, MINLAG_PEF and MAXLAG_PEF: these correspond to gap length and operator length, respectively.

- Try to vary the gap length from 0.004 to 0.02 s and the operator length from 0.1 to 2 s. What combination works best? Why?

- Before you change MINLAG_PEF and MAXLAG_PEF parameters, you can type the following command to clean the files:

- bash Clean.sh

Deconvolution on viking graben data: ntg

On the AGC corrected ntg gather, minimum phased using sushape: Try to eliminate the sea-bottom multiples using predictive error filtering (supef). Bandpass filter the data after deconvolution. Pick the optimum parameters for deconvolution. Are the multiples attenuated?

(Consult the shell script "minphs_pred_decon.sh" for an example of how to use supef and how to do bandpass filtering. Caution: do not use the same parameters as in the shell script (those parameters are for the synthetic data).. you will have to tune your parameters according to **your** data!)

Deconvolution on viking graben data: CMP gathers

Repeat the steps from last slide for the three CMP gathers in the Viking Graben data. You have to nmo correct the CMP gathers (with water velocity) prior to deconvolution.