SEISMIC DATA QC & PROCESSING IN PRE-STACK PRO

2-DAY COURSE

OVERVIEW

This course is aimed for people having some familiarity with gather conditioning, data loading and the basic functionalities of Pre-Stack Pro. It teaches the methods to QC your dataset for identification of remaining issues with noise content, time alignment, and bandwidth equalization, and how to solve these problems.

Using a training dataset, the participant will go through QC attribute creation, how to use the visualization tools to efficiently parse attributes and find problems, and building of a sequence through interactive testing of conditioning algorithms. The geophysical method used in the algorithms will be explained in short lectures.

DAY 1

INTRODUCTION AND DATA QC

Why do we need to process?

Learn what can distort the signal and why there is noise in the data.

Load gathers and compare them to synthetic model to assess the fit and the noise content in the data.

QC HEALTH CHECK

Run or create new Sharp Reflections' Health Check routines to quantify issues in the data.

Map the spatial heterogeneity and extent of these problems.

PARABOLIC RADON DEMULTIPLE

Learn the geophysical method and see how the mute used impacts the results.

Compare the results when using amplitude equalization wrap-around.

Modify the transform parameters to avoid aliasing in the Radon domain.

Compare the quality of the output when modifying the expert parameters.

Build the AVA NRMS Health check to quantify the improvement.

2D RANDOM NOISE ATTENUATION

Use previews and wiggle plots to see the effect of the algorithm.

Modify the parameters to change the strength of the filter.

DAY 2

RESIDUAL MOVE-OUT

Learn the higher order move-out method and its requirements.

Use previews to find the optimum scanning range for anisotropy and threshold parameters.

Stabilize the results on far stacks by smoothing the velocity and anisotropy fields.

Use cross-plotting to remove the correlation between velocity and eta fields.

Create RMO attribute check to quantify the improvements.

TIME ALIGNMENT

Setup basic parameters to find the optimum time-shift field.

Use statistical editing to remove outliers.

Smooth the time-shift spatially to stabilize the results on far stacks.

SPECTRAL BALANCING

Map bandwidth and create amplitude spectrum to quantify the differences for near, mid and far angles and assess the need for balancing.

Find optimum parameters for spectral balancing.

Use the wavelet tool to create a static wavelet shaping operator.

Compare the two methods by quantifying the improvements.

AMPLITUDE BALANCING

Quantify the amplitude variation with offset relative to the AVO model curve.

Compute gain scalar derived from well information.

Apply the scalar and quantify the improvement.

OTHER INFORMATION

DURATION

2 Days
9:00 – 16:00

LOCATION

Sharp Reflections AS
iPark
Professor Olav Hanssens vei 7
4021 Stavanger

COST

NOK 10.500,-