

Seismic Data Scaling: Uncertainties, Potential and Applications in Workstation Interpretation

Authors : Ankur Mundhra, Shubhadeep Chakraborty, Y. R. Singh, Vishal Das

Abstract : Seismic data scaling affects the dynamic range of a data and with present day lower costs of storage and higher reliability of Hard Disk data, scaling is not suggested. However, in dealing with data of different vintages, which perhaps were processed in 16 bits or even 8 bits and are need to be processed with 32 bit available data, scaling is performed. Also, scaling amplifies low amplitude events in deeper region which disappear due to high amplitude shallow events that saturate amplitude scale. We have focused on significance of scaling data to aid interpretation. This study elucidates a proper seismic loading procedure in workstations without using default preset parameters as available in most software suites. Differences and distribution of amplitude values at different depth for seismic data are probed in this exercise. Proper loading parameters are identified and associated steps are explained that needs to be taken care of while loading data. Finally, the exercise interprets the un-certainties which might arise when correlating scaled and unscaled versions of seismic data with synthetics. As, seismic well tie correlates the seismic reflection events with well markers, for our study it is used to identify regions which are enhanced and/or affected by scaling parameter(s).

Keywords : clipping, compression, resolution, seismic scaling

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020