Integrating Well and Seismic Data for Rock Type Prediction Using a Democratic Neural Network Association Approach

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ABSTRACT

One of the main challenges in hydrocarbon recovery is combining geological information about lithology and geophysical data acquired through reflection seismic data acquisition. As these data can take different forms (litho-logs, cuttings, and for seismic data post and prestack attributes) and can have different resolutions, the manual integration of all the information contained in them requires extensive analysis and is sometimes unsolvable.

We therefore propose a new methodology to predict lithology interpreted at wells using 3D seismic attributes (post and prestack). This technique aims at finding patterns in seismic attributes that will predict lithology kind, distribution and uncertainty using a probabilistic approach.