



AVO Seismic data inversion using global simultaneous technique

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The main objective of this work is to apply the global simultaneous inversion of AVO real seismic data of the NORNE petroleum field located in the North Sea. Inversion has been applied to characterize the physical reservoir properties in term of acoustic impedance, Poisson's coefficient and Density.

The proposed technique is applied at a small seismic cube of an hydrocarbon reservoir. Obtained results consists of the three cube cited above. Comparison of these last with a well-logs data of a borehole located in the area shows that the global simultaneous inversion can be used for reservoir properties prediction.

These results can be used by geoscientists for better reservoir characterization and built a sub-surface dynamic model. The goal is to minimize the hydrocarbon exploration uncertainly.

Keywords: global simultaneous inversion, AVO, North Sea, cube, reservoir characterization.