

New Technique of Automated Interpretation of Structural and Tectonic Faulting Based on Three-Dimensional Seismic Survey Results

S.N. Skripkin

*Russian State University of Oil and Gas
named after I.M. Gubkin, Moscow*

Key words and phrases: automated interpretation of seismic fault; automated seismic interpretation; seismic interpretation; structural analysis; three-dimensional seismic survey.

Abstract: The paper presents the description of a new technique of automated interpretation of structural and tectonic faulting in hydrocarbon bed on the basis of three-dimensional seismic survey. The objective of the technique is interpretation quality improvement as well as reduction in time spent on it. The paper proposes both definition and solution to the problem as the task of three-dimensional image processing; thus the proposed technique enables to apply this algorithm to three-dimensional examination of different objects, such as fault surface, drain interface, domed salt, etc. Mathematical description of the techniques and the example of automated examination of real seismic data on faulting are given. The produced results prove the accuracy of automated interpretation, the possibility of multi-attribute analysis application taking into account expert knowledge of the examined object.