3 Dimensional Reflection Seismology and its Visualization

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Oil and Gas exploration and oil field developments are very important engineering branches in security of energy resources in order to support the modern society. The reflection seismic method has been developed at oil industries. In oil exploration of recent years, targets and their geological features become more complicated, and the discovered oil field became smaller. In addition, in late years, the oil field development in the deep sea (depth of the water 500m - 2000m) and the super deep sea which were not able to become a target (more than depth of the water 2000m) became important target till now by progress of ocean drilling technology in the deep sea. Existence of the methane hydrate becomes clear, and various kinds of studies and technology development to affect a basement inquiry for the searching for oil fields and development are moving lively around Japanese shore. Therefore, a demand of investigation of the three dimensional subsurface structures with visualization technology faithfully became higher and higher.

The research of three-dimensional seismic method was began in 1980’s, the technology developed rapidly in after 1990’s, and it is applied daily works now. This is positioned in a very big revolution from the technical history to investigate the subsurface structures. The influence of this technology revolution is moving in geology currently. In this presentation, I would like to survey this situation from the visualization technology point of view.