The appliance of different migration methods while processing of mid-frequency seismic data on the shelf of the Black Sea

Iuliia Tsup
National Taras Shevchenko University of Kyiv

The interest in hydrocarbon researches on the shelf of Black sea is determined by numerous discoveries of oil and gas beds in the basin (water area). Therefore, the actual aim (task) is a detailed processing of seismic data on these territories.

The marine media frequency researches and the works for improving data processing efficiency were held on the areas of Near Kerch shelf.

The main task was the elimination of diffracted waves and reflection branches on the areas with rugged (strong variable) sea-floor relief using different types of migration.

The migration is required to restore the locations of reflection depth points.

The post stack 2D time 45-degree finite-difference migration of time sections was performed in Omega-X domain (MIGFX program).

The obtained results shows us the essential efficiency of MIGFX program appliance for defined lines.

The exact 2D time 45-degree finite-difference migration of time sections was performed with the aim of comparing different types of migration.

The post stack 2D time migration (with a Kirchhgoff algorithm) was also used in the process of migration of all lines.

The final phase of detailed media frequency seismic researches data processing was completed with a prestack Kirchhgoff time migration of two types using GeoDepth/Power program.

The first version of prestack migration was performed using the velocity model obtained after the processing in Focus programming complex and the second one - in the result of velocity model correction in GeoDepth/Power program complex.

The shown examples give an opportunity to choose the most effective type of migration in resolving geological tasks with certain seismic and geological conditions.

References

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