Sedimentation model of Tuapse trough (Russian part of Black Sea)

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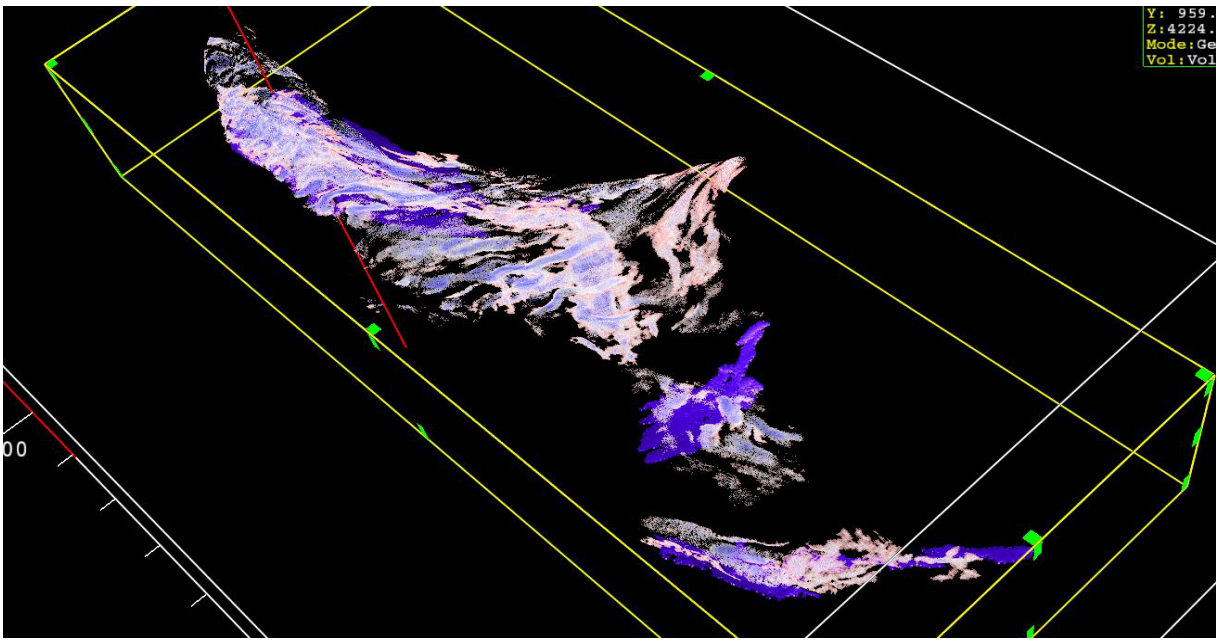
Last few years Rosneft oil company obtained a lot of new 2D/3D seismic data to explore the deep part of the Black Sea, in particular the Tuapse Trough. New data allowed to study in detail the main features of sedimentation model of prospect intervals (maykop, karagan – chokrakian).
As a result of this work sedimentation model was chosen for maykop and karagan-sarmatian, associated with the deepwater depositional system. It's assumed that sedimentation in Oligocene – Miocene was controlled by extensive system of coastal paleo rivers. Its confirmed by the conclusions of attribute analysis, the result of which were identified the main parts of fan complex (picture 1) – proximal, central with axis channels, distal with sheets.



Picture 1. Fan complex in 3D view in transparency cube.

The situation of the modern river system within the North Caucasus region suggests that the main sources of sediments in Oligocene – Miocene time could be paleo rivers Mzymta and Bzyb. They were able to supply products of destruction of granite massifs of Central Caucasus. North Caucasus, within which the granite massifs are absent, can be regarded as a promising source (Jurassic – Cretaceous and Paleocene – Eocene terrigenous-carbonate flysch), although as we know, this complex characterized by significant thickness and area of distribution, containing quartz sandstones (Lower Cretaceous, Paleocene).
In accordance with the results of interpretation for the intervals of lower and middle Oligocene? orientation of fans characterized the northwest, i.e. parallel to the current coastline. This, in turn, gives hope for the dominant development of sediments made by paleo rivers Mzymta and Bzyb. These rivers originate in the central Caucasus, where developed outcrops of granite massifs, the best source for the formation of quartz sandstones, observed in sections of coastal outcrops and wells Sochi – Adler land area. For the intervals of the upper Oligocene? – Lower Miocene (upper part of the Maikop series) is characterized by a change of direction of fan complexes. Fan bodies and their lobes are oriented at an acute angle to the shoreline. Perhaps this is due to the formation of additional sources of drift in the North Caucasus.