

Study of deep underground structure of mud volcanoes in North-Western Caucasus by means of geological and geophysical methods

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Results of complementary geological and geophysical studies of mud volcanic phenomena in North-Western Caucasus (Taman mud volcanic province) are presented. Geophysical field works have been carried out in 2005—2009 on the two different mud volcanoes: the Gora Karabetova and the Shugo mud volcano.

Usage of methods of vibroseismic sounding, traditional magneto-telluric sounding and relatively new method of low-frequency microseismic sounding allows obtaining several independent vertical cross-sections for the two different mud volcanoes down

to the depth of 25 km. For the two different mud volcanoes their deep subsurface structure has been revealed and discussed with respect to regional tectonic settings, geology and geomorphology.

The Gora Karabetova mud volcano is one of the most active mud volcanoes in the Taman peninsula with primarily explosive behaviour while the Shugo mud volcano's activity pattern is different, explosive events are rare and both types of phenomena may be explained by the configuration of their feeding systems, tectonic position and deep pathways of migration of fluids.

References

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Current assessment and accounting of geodynamic phenomena in engineering geology with geological and geophysical methods of investigation

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Despite the apparent inconsistency of the existing theoretical views on many aspects of the tectonic processes in the lithosphere, no one no longer doubt the assertion that the entire Earth's crust

is divided into very difficult, though not devoid of certain laws, and a network of numerous raznorangovyh poligeneticheskikh faults. In addition, because of the continuous mobility of the earth's crust,