ISOTOPE-GASGEOCHMICAL FEATURES OF METHANE AND CARBON DIOXID DISTRIBUTION ON SAKHALIN ISLAND AND ADJACENT SHELF OF THE SEA OF OKHOTSK

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The present paper gives the approved interpretation of the basic gas geochemical and geological-tectonic relationships of occurrence and distribution of ascending gas currents with various genesis types on Sakhalin Island and adjoining shelf. Basing on author's research and as well as on the analysis of archival and literary materials, zones of the first order were marked out on Sakhalin Island: a methane zone (the northeastern part of Sakhalin Island) and a carbon-dioxide-methane zone (west, southwest). The article shows that on a shallow shelf the areal leakages of methane with a high share of thermogenic component ($\delta^{13}C\text{-}CH_4$ up to -35 ‰ PDB) are widely spread. The presented results of isotope gas geochemical research are important in fundamental aspects of an origin and dispersion of natural gases and ecological-applied aspects – gas hazard reduction in the populated areas.

Keywords: methane, carbon dioxide, Sakhalin Island, shelf, gasgeochemistry.