

## METHANE FLUXES AND GAS HYDRATE IN THE OKHOTSK SEA

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### ABSTRACT

Interest to study methane fluxes and gas hydrate is to understand influence methane fluxes and gas hydrate on geological processes and to search regularities to form it. Mostly purpose is to examine source of methane and geological conditions to form gas hydrate. Looking for fluxes of bubbles methane from sediment to water and gas hydrate carry out in International and Russia expedition. In its are using complex of methods: geology, geophysics, gas geochemistry, hydroacoustics, morpho-structures investigation. Methane anomalies in the sediment and water column, gas hydrate are good indicator to search oil-gas deposits, mapping of zones faults, to examine seismic activity, to forecast earthquake, to determine ecology and process of global changing (warmer) climate and to mine methane from gas hydrate. There is found that fluxes methane and gas hydrate to form in the zones faults and methane migrates from oil-gas deposit and oil-gas-bearing layers comes up to use fault. It is important that gas hydrate is good cap that assisting to form oil-gas deposits.

**Keywords:** Fluxes of methane bubbles, gas hydrate, anomalies of methane in water and in bottom sediment, indicator to search hydrocarbon, Okhotsk Sea.

### REFERENCES

1. Obzhairov A.I. Kazanskiy B.A., Mel'nichenko Yu.I. Jeffekt zvukorasseivaniya pridonnoj vody v kraevykh chastyakh Okhotskogo morja. *Tikhookeanskaya geologiya - Russian Journal of Pacific Geology*, 1989, no. 2, pp. 119–121.
2. Obzhairov A.I. *Gazogekhimicheskie polya pridonnogo sloya morey i okeanov* [Gas-geochemical fields of the bottom layer of the seas and oceans]. Moscow, Nauka Publ., 1993, 139 p.
3. Obzhairov A.I., Sosnin V.A., Salyuk A.N., Vereshchagina O. F. *Monitoring metana v Okhotskom more* [Monitoring of methane in the sea of Okhotsk]. Vladivostok, Dal'nauka Publ., 2002, 250 p.
4. Obzhairov A., Shakirov R., Salyuk A., Suess E., Biebow N., Salomatin A. Relations between methane venting, geological structure and seismo-tectonics in the Okhotsk Sea. *Geo-Marine Letters*, 2004, vol. 24, no. 3, pp. 135–139.
5. Obzhairov A.I., Salomatin A.S., Yusupov V.I. *Gazogidroakusticheskiy kompleks dlya otsenki seysmotektonicheskoy aktivizatsii* [Gas-hydroacoustic complex for estimation of seismotectonic activation]. Patent RF, no. 78333, 2008.
6. Obzhairov A.I., Tagil'tsev A.A. *Tekhnologicheskiy kompleks dlya razrabotki gazogidratnykh zalezhey v otkrytom more* [Technological complex for exploitation of gas hydrate deposits in the high sea]. Patent RF, no. 2386015, 2008.
7. Obzhairov A.I. *Sposob prognoza zalezhey uglevodorodov* [Method of forecast of hydrocarbon deposits]. Patent RF, no. 2359290, 2007.
8. Operation Report of Sakhalin Slope Gas Hydrate Project 2009. R/V “Akademik M.A. Lavrentyev”. Cruise 47, Shoji H., Jin Y.K., Obzhairov A., Baranov B. 2010. 123 ps.
9. Kharakinov V.V. *Neftegazovaya geologiya Sakhalinskogo regiona* [Petroleum Geology of the Sakhalin region]. Moscow, Nauchnyy mir Publ., 2010, 276 p.
10. Yusupov V.I., Salomatin A.S., Obzhairov A.I. *Gazogefizicheskiy kompleks dlya obnaruzheniya podvodnykh vykhodov gazogidratov* [Gas-geophysical complex for detection of underwater gas-hydrate exits]. Patent RF, no. 70377, 2007.