



Natural gas hydrates from mud volcanoes in the Gulf of Cadiz

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More than 25 mud volcanoes were discovered and investigated in the Gulf of Cadiz during the Training Through Research cruises of R/V “Professor Logachev” (1999-2006). Large set of geophysical, geological and geochemical methods was applied for study of these structures.

Gas Hydrates were sampled from five mud volcanoes: Ginsburg, Bonjardim, Captain Arutyunov, Semenovich and Soloviev. They usually presented by thin white plates and millimetric crystals diffused in sediments. Monitoring of some structures in several years reveal that these accumulations are not stable during a time and can disappear or appear in different place. Most probably it depends of periods of their seep activity.

Several other volcanoes: Carlos Ribeiro, Porto, Olenin, Meknes demonstrate very high methane concentrations in the mud breccia deposits (up to 7000 mkM/l). Pore water composition showed strong depletion of Cl^- ion compare to bottom water and reference station. Potentially they also can contain gas hydrates in sediments.

Analysis of side scan sonar images revealed some clear indications of shallow gas hydrate accumulations.