Distribution and characteristics of gas seeps on the NE Sakhalin continental slope, Sea of Okhotsk

Young Jin[1]; Hitoshi Shoji[2]; Anatoly Obzhirov[3]; Boris Baranov[4]

[1] KOPRI; [2] New Energy Resources Research Center, Kitami Institute of Technology; [3] POI; [4] Inst. Oceanol., RAS

During CHAOS (2003, 2006) and SSGH projects (2007), side-scan sonar and high-resolution seismic survey was carried out on the northeastern Sakhalin slope (53deg. 56min. N, 143deg. 52min. E to 54deg. 40min. N, 144deg. 32min. E). More than 130 seafloor structures with high backscatter intensity are identified on SSS mosaic of the area. Most of them are circular and widely distributed in the slope shallower than 1000 m water depth, while the rest are linear and angular appearing in the flat basin area deeper than 1000 m. The circular structures are interpreted to be gas seeps, which is evident with sub-bottom structures showing upward migration of gas/fluid from depth and gas flares released from the seeps into the water column. The angular ones turned out seafloor undulations. Diameters of the seeps ranges from 100 m to 800 m. CHAOS, KITAMI, KOPRI and OBZHIROV seeps are major ones accompanied with gas flares, gas chimney structure, and gas hydrate, Distribution of the seeps is uneven. About 70 seeps densely gather in the area between 54deg. 28min. E and 54deg. 31min. E. It is likely that that some seeps align along a NW strike parallel to the Lavrentyev Fault.