



Distribution of BSRs and gas accumulations offshore of Zonguldak Region, Central Blacksea

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In the deep waters of the Black Sea, methane accumulations are common features. Recent studies show that possible gas accumulations and gas hydrate accumulations on Kozlu region are suggested from continental slope to apron side. In 2010, we collected approximately 2300 km of multichannel seismic data along with multibeam bathymetry and high resolution chirp subbottom profiler data in the central Black Sea offshore of Kozlu in order to define shallow gas accumulations, and possible gas hydrate occurrences such as BSR reflections.

Shallow sedimentary structure mainly consists of pelagic to hemipelagic sediments and turbiditic sequences in the area. A distributary channel system also exists in the study area, which possibly plays an important role in downward re-distribution of the sediments. Underwater mass movements (slides, slumps and growth faults) effects the sedimentary sequence and the tectono-sedimentary small scale sedimentary basins have been formed over the continental slope and continental rise areas.

Preliminary interpretations indicate that there are wide spread BSR reflections and acoustic blanking zones especially at the eastern part of the study area. Several BSR reflections have also observed 100 to 200 ms below the seabed, which crosscut the sedimentary layers. Most of the BSRs have free gas below acting as a cap rock. Seismic attribute analyses were applied to the seismic data to enhance the BSR reflections, to obtain the polarity and frequency sections. The gas in the gas hydrate accumulations are possibly from the deeper HC reservoirs located in the Pliocene and Miocene fan systems. Productive Akçakoca-1 well near the study area currently produces gas from the Eocene turbidites.

Below the BSR reflections are trapped free gas in some certain areas on the continental slope, distinguished by acoustic wipe-out zones. In addition, some other semi-transparent zones are also observed below the ridge structures at shallower depths below the seabed.

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