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Gas-charged sediments from the eastern continental shelf off Korea

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Gas-charged sediments were investigated with geophysical data, remotely operated vehicle (ROV) observations, and cored sediments on the eastern continental shelf off Korea. The geophysical data used this study consist of Chirp profiling data (0.5-12 kHz), single-beam echo sounding data (33 kHz), multi-beam echo sounding data (200 kHz), and side-scan sonar data (400 kHz). Our data shows that acoustic blanket with enhanced reflection was typically observed at water depths between 50 m and 120 m on the eastern continental shelf. The plumes in the water column generally reveal above the acoustic blanket at shallow water depth ($\sim$ 50 m), acoustic imaging with Chirp profiling and single-beam echo sounding data. Although no obvious evidence of seepage was observed during ROV observations with methane sensor, water samples, CTD, and underwater video camera. Gas-charged sediments in the eastern continental shelf occur as thick Holocene deposits. The distribution of gas-charged sediments and plumes could be due to variations with water depth.