Geochemistry of seawater and interstitial water from Tsushima Basin and Oki Trough, Japan

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The characteristic seafloor topography associated with gas hydrates in shallow sediments was reported in the seafloor of the SE margin of Tsushima Basin and Oki Trough, Japan. Interstitial water and seawater collected from these areas during the UT14 cruise were analyzed for characterizing the fluid geochemistry responsible for methane migration toward the seafloor and formation of hydrates. In the eastern margin of Tsushima Basin, high concentrations of sulfate and alkalinity in interstitial water reflect very shallow SMI depths (~1.7mbsf), strong methane fluxes, and methane generation due to the decomposition of organic matters in shallow sediments. The low concentrations of silicate dissolved in seawater indicate that the buried old organic matters are responsible for the formation and distribution of gas hydrates near the seafloor.

