

## Measurement of in situ dissolved CH<sub>4</sub> oxidation rate in hydrothermal vent area at the Suiyo Seamount.

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Methane is one of the important carbon sources for the hydrothermal vent ecosystem. However, in spite of extensive analyses of dissolved methane concentration, carbon isotope composition of methane, much remains to be learned about the microbiology of methane production and oxidation. In the present study, in situ oxidation rate of dissolved methane was measured at hydrothermal vent area in the Suiyo Seamount, Izu-Bonin Arc. The equipment of methane oxidation measurement which was combined Niskin water sampler with time series water sampler was attached to Shinkai 2000. In situ methane oxidation rate at the hydrothermal vent area was  $0.016 \text{ hr}^{-1}$ , and methane consumption rate, which is obtained from multiplying the methane oxidation rate by the methane concentration, was  $13.6 \text{ nM CH}_4 \text{ hr}^{-1}$ . It suggests that dissolved methane oxidation by microorganism should be important organic carbon source for the hydrothermal vent ecosystem.