Japan Geoscience Union Meeting 2015

(May 24th - 28th at Makuhari, Chiba, Japan) ©2015. Japan Geoscience Union. All Rights Reserved.

MIS24-11

会場:102B

時間:5月28日10:15-10:30

## 2014年7K14航海における日本海東縁の海洋上大気ガス濃度分布 Distribution of atmospheric gas concentration in eastern margin of Japan Sea: A preliminary report from the 7K14 cruises

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Hydrate of natural gas is widely distributed in marine sediments in the eastern margin of Japan Sea. The natural deposits of gas hydrates are estimated to hold higher reserves than known conventional gas reservoirs. An active seepage of gas from the seafloor has previously been reported from gas hydrate fields worldwide. Atmospheric methane ( $CH_4$ ), major component of seep gases, is an important short-lived climate pollutant. Our objective was to measure the distribution of atmospheric  $CH_4$  concentration over the sea surface of gas hydrate areas along the eastern margin of Japan Sea.

We used the R/V Kaiyo-Maru No.7 (Kaiyo Engineering Co., Ltd., Japan) for the survey in the Oki Trough and offshore Akita-Yamagata (Mogami Trough) from mid April to early June 2014. Continuous measurement of atmospheric CH4 was performed on the ship using a wave-length-scanned cavity ring-down spectrometer (WS-CRDS) (model G2201-i, Picarro Inc., USA). Air sample was collected from an air intake at the top deck of the ship using an air pump placed in the observation room. To our experience, the ship sailed at approximately 6 knot. Location data were obtained from the nautical GPS.

Observed  $CH_4$  concentration over the sea surface was not uniform in Mogami Trough, while mostly uniform throughout the Oki Trough. In addition, there was a tendency that  $CH_4$  concentration in Mogami Trough was higher than that in Oki Trough. This research was a part of METI's project entitled "FY2014 Promoting research and development on methane hydrate".

キーワード: 表層型ガスハイドレート, メタンガス, ガス濃度分布

Keywords: shallow gas hydrates, methane gas, distribution of gas concentration