

SERIES OF OBSERVATIONS OF ATMOSPHERIC METHANE
ABOARD THE ICEBREAKER SHIRASE (ABSTRACT)

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Atmospheric methane has a greenhouse effect and plays an important role in atmospheric chemistry. Recently, global increase of the atmospheric methane concentration has been reported. However, few data on methane distribution covering a wide area are available.

We have been developing an instrument which enables us to observe methane concentration with high time resolution, and we are trying to observe the methane distribution. The instrument utilizes the absorption of He-Ne laser light ($\lambda=3.39 \mu\text{m}$) by methane molecules.

Test observations of the global distribution of surface methane mixing ratio was made aboard the icebreaker SHIRASE in November 1990. We had some problems with the stability of the instrument, but a decrease of methane mixing ratio was found from 5°N to 15°S. The observed data are scattered around 1.9 ppmv at 25°N-5°N, 1.7 ppmv at 15°S-25°S.

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