

MERIDIONAL OZONE DISTRIBUTION ANALYSES USING THE OZONE
SONDE DATA OBSERVED ONBOARD THE ICEBREAKER SHIRASE
(ABSTRACT)

Rintaro OSHIMA¹ and Masato SHIOTANI²

¹Department of Geophysics, Kyoto University, Sakyo-ku, Kyoto 606

*²Division of Ocean and Atmospheric Sciences, Graduate School of Environmental Earth Science,
Hokkaido University, Kita-ku, Sapporo 060*

Daily ozone sonde observations were conducted onboard the research vessel SHIRASE during a cruise from Tokyo, Japan to Syowa Station in Antarctica, for 4 consecutive southern hemispheric summers from 1987 to 1990. Here we discuss some results obtained for the meridional distribution of ozone mixing ratio over the tropics.

In the troposphere, a sink reaching as high as the tropopause was found over the northern hemisphere tropics, while previous analyses by SEILER and FISHMAN (*J. Geophys. Res.*, **86**, 7255, 1981) and MARENCO and SAID (*Atmos. Environ.*, **23**, 201, 1989) report a sink over the southern hemisphere in the northern hemispheric summer. Therefore, it may be possible to assume a distinct annual variation of ozone above the tropics with a sink in the winter hemisphere.

When we look at the deviation from the 4 year averaged ozone field, layered structures of maximum and minimum ozone mixing ratios running in the north-south direction are seen and seem to be in positive correlation with the temperature variation field derived in the same way. The cause of this correlation is yet unknown, but gravity waves or variations in tropopause height may be considered as possible candidates.

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