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INTEGRATED LIQUID WATER CONTENTS AND WATER VAPOR AMOUNTS IN MARCH 1988 AROUND SYOWA STATION (ABSTRACT)

Makoto WADA[1], Katsumoto SEKO[2] and Takashi YAMANOUCHI[1]

[1]*National Institute of Polar Research, 9–10, Kaga 1-chome, Itabashi-ku, Tokyo 173*
[2]*Water Research Institute, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-01*

It is very important in studying clouds and precipitation to precisely estimate vertically integrated liquid water content and water vapor amount in the atmosphere. Clouds and precipitation observations using microwave radiometer were carrid out at Syowa Station in East Antarctica in 1988. Vertically integrated liquid water contents at Syowa Station were estimated using ground based microwave radiometer data. In addition, water vapor amounts were measured by radiosonde observations. Moreover, vertically integrated liqiud water content and water vapor amount above the sea area near Syowa Station were also estimated using DMSP satellite SSM/I data.

Our paper describes the results of estimations in March 1988. The maximum value of the vertically integrated liquid water contents associated with a fairly strong cyclone in March was about 55 mg/cm^2 calculated by one-min mean data of the microwave radiometers, and the maximum value of the water vapor amounts in March was about 15 mm, estimated from the radiosonde data. The maximum values of vertically integrated liqiud water content and water vapor amount were estimated to be about 25 mg/cm^2 and 10 mm, respectively, calculated from SSM/I data. The averaged water vapor on fine days in March was about 5 mm, estimated from both ground and space observations.

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