

Atmospheric Observational Plans for JARE48 at Syowa Station, Antarctica

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We propose three observational plans for JARE48 period (February 2007-January 2008). One is a coordinated ozonesonde monitoring project by several participating Antarctic stations to quantify chemical ozone depletion 'so-called the ozonehole' which is the similar project as previously executed QUOBI project in 2003. This project is authorized as one of the IPY 2007-2008 project from the ICSU.

Another is a ground-based FTIR measurements of ozone-related trace species, such as O₃, HNO₃, HCl, HF, ClONO₂, N₂O, CH₄, H₂O, CO, CFC-11, CFC-12, SF₆, etc. We will plan to install the mobile Bruker IFS-120M FTIR at Syowa Station, and make annual measurements with sun and moon as a light source.

The other is a new type of PSC measurements at Syowa Station. We propose a spectroscopic measurement of PSCs in mid-infrared (5-10 micron) region. Each type of PSCs (NAT, NAD, STS, Ice, etc.) is regarded to have different spectral features in mid-infrared region. We propose to develop a spectrometer to measure spectral feature of PSCs from ground by using solar scattered light and emission from PSCs itself as a light source. Simultaneous measurements of depolarization ratios and heights of PSCs by a lidar system is also planned.