

ANALYSIS OF WEATHER AND CLOUDS BY SURFACE SYNOPTIC DATA AT SYOWA STATION (ABSTRACT)

Toshinori TAKAO¹ and Jinji KOIKE²

¹*Aerological Observatory, 1-2, Nagamine, Tsukuba 305*

²*Tokyo District Meteorological Observatory, 3-4, Otemachi 1-chome,
Chiyoda-ku, Tokyo 100*

Statistical analysis was done on the daily surface synoptic data at Syowa Station, Antarctica. Monthly mean values of weather and clouds were calculated to discuss the normal conditions and trends.

Normal weather conditions are discussed and the results are used in review of the Syowa Station manual on weather forecasting. The results of calculated normal cloud conditions show that there exists a seasonal variation of cloud types.

There is a positive correlation coefficient 0.69 between the monthly mean cloud amount in January and the sunspot number. From late spring to summer, however, there exist the significant trends in monthly mean cloud amounts and in the surface wind speed. After 1981 to 1993, October through December mean cloud amount, December through February 850 hPa wind velocity, December through February surface wind velocity are 6.8, 8.0 m/s, 5.5 m/s respectively, while they are 6.0, 7.2 m/s, 4.3 m/s before 1980. Climate at Syowa may be affected by SST change of the Indian Ocean. This easterly wind acceleration is consistent with the MRI GCM prediction related to SST change.

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