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# YEAR-ROUND SURFACE SYNOPTIC OBSERVATIONS AT DOME FUJI STATION, EAST ANTARCTICA CONDUCTED BY THE FIRST OVERWINTERING PARTY (ABSTRACT)

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The 36th Japanese Antarctic Research Expedition (JARE-36) commenced surface synoptic observations at Dome Fuji Station, East Antarctica on 11 February 1995 as a part of the Deep Ice Coring Project at Dome Fuji, East Antarctica (the fourth year). The first overwintering team at the Dome Fuji Station conducted year-round surface synoptic observations under extremely cold weather conditions which had not been experienced by any other Japanese project before.

Synoptic observation data of surface pressure, temperature, wind direction, wind speed and flux of global solar radiation were automatically recorded every one minute. These automated observation data were obtained without trouble throughout the overwintering period. This was made possible by development of special instruments protected against frost and snow accretion, which had been the major difficulty in automated observation in the antarctic area. Visibility, total cloud amount, cloud forms, atmospheric phenomena and present weather conditions were visually observed everyday at 09, 15 and 21 o'clock in local time. We obtained these visual observations year-round at Dome Fuji Station for the first time.

During our one-year stay at the Station, from March 1995 to February 1996, an annual mean temperature of −53.9°C was observed. The lowest temperature of −79.6°C for this period was marked on 18 August 1995. Annual mean surface pressure was 598.2 hPa and annual mean wind speed was 5.8 m/s. Except in summer, a rather strong wind speed of about 6 m/s was steadily observed throughout the year and the gust ratio was very small. That was a distinctive characteristic of the wind at the Dome Fuji Station. No prevailing wind direction was observed at the Station. The most frequent surface wind direction of each month corresponded well with the monthly averaged geostrophic wind direction at 500 hPa height. Annual mean total cloud cover was about 40%. High cloud was dominant even in the case of cloudy weather. Ice prisms (diamond dust) were observed almost every day.

Details of the observed data were published in the Antarctic Meteorological Data of the Japan Meteorological Agency in 1995. Details of the surface synoptic observations including accuracy of the measuring instruments at the Dome Fuji Station will be summarized in the Antarctic Report to be published by the National Institute of Polar Research.

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