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TESTS OF WIND POWER GENERATOR AND SOLAR BATTERY IN THE INLAND AREAS OF ANTARCTICA (ABSTRACT)

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Supply of electric power is a critical factor for developing an automatic observation system. Wind generators and solar battery have been tested at the Relay Point since 1992, and at Dome Fuji in 1995. Most wind generators worked in summer. However, during the winter, only one of the aerovane type generators worked. Other types and even the some of the aerovane type did not rotate during the coldest season. The lower limit of ambient temperature for rotating generators was about -65°C . The critical factor was viscosity of grease at the low temperature. Therefore, improved grease is required for year-round use of the wind generator. The solar battery worked normally and it was not damaged mechanically. However, the electric power from the solar panel was slightly decreased after use for two years. For practical use of generators, there remain some technical problems such as finding new grease, and improving the construction of the wind generator for larger torque.

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ON THE SUPERCOOLED DRIZZLE OBSERVED AT INUVIK IN THE MID-WINTER SEASON (WANTS-ARCTIC; CANADA) (ABSTRACT)

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Supercooled drizzle was observed at Inuvik, N.W.T., Canada ($68^{\circ}22'\text{N}$, $133^{\circ}42'\text{W}$) on December 20, 21 and 27, 1995. Meteorological conditions in which the supercooled drizzle could form under low temperatures in the mid-winter season of Arctic Canada were examined from the sounding data and data measured by a passive microwave radiometer at ground level.

The following results were obtained:

- 1) Supercooled drizzle fell to the ground with ice pellets and frozen drops on snow crystals.
- 2) The maximum size of supercooled drizzle particles increased as the depth of cloud layer saturated with respect to water increased.
- 3) Because a layer of air temperature higher than 0°C was not detected from the sounding data at Inuvik, melting of snow particles was impossible. It was concluded, therefore, that supercooled drizzle was formed by the collision-coalescence process below freezing temperature.

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