

ON VERTICAL PROFILE OF OZONE AT SYOWA STATION,  
ANTARCTICA, 1966-1988 (ABSTRACT)

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The changes in vertical ozone profiles and temperature at Syowa Station (69°S, 40°E) are shown to explain the mechanism of Antarctic ozone change.

The differences in the monthly mean ozone vertical profiles between 1966-1981 and 1982-1988 at Syowa and those at the South Pole are discussed. The results show that severe ozone decrease occurs around October and November in the layer between 100-mb and 70-mb. Statistically significant ozone increase is found in January in the layer from 20-mb to 17.5-mb at Syowa. Similar increase in ozone is also seen in the layer around 20-mb at the South Pole in December, though it is not statistically significant.

The vertically integrated changes of ozone partial pressure with ozonesonde associated with 100-mb temperature changes are shown together with the change of total ozone calculated from Dobson ozone observations and routine radiosonde observations for the periods of 1961-1981 and 1982-1988. Calculated ozone changes with 100-mb temperature changes agree well with the changes in total ozone by the Dobson spectrophotometer in the period 1982-1988.

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