

MEASUREMENT OF CARBON MONOXIDE AT SYOWA STATION
(ABSTRACT)

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Atmospheric carbon monoxide (CO) was measured at Syowa Station from early April 1990 to late January 1991. A semi-automated measurement system with nondispersive infrared gas analyzer (NDIR) was used for the measurements. CO concentration in the Antarctic region was expected to be extremely low. Therefore, it is important to confirm the zero drift of the NDIR. Air samples and zero gas were introduced in the NDIR alternately for 80 and 40 min, respectively. Gas with zero CO content was made by a purifier in which sample air was passed through a heated Pt catalyzer to oxidize CO to CO₂. The response of the NDIR was calibrated manually using a standard gas once per day or once per two days. CO concentration of the standard gas was 1.9 ppm, and the gas was stored in an aluminum cylinder considering the long-term stability of CO concentration.

The result depicts a clear seasonal variation showing a maximum in late winter to spring, and a minimum in the austral summer.

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