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COMPARISON OF TOTAL OZONE OVER SYOWA STATION BETWEEN NIMBUS7 TOMS VERSION 6 DATA AND DOBSON DATA (ABSTRACT)

Kazuo SHIBASAKI

Kokugakuin University, 10–28, Higashi 4-chome, Shibuya-ku, Tokyo 150

Total ozone data obtained with a Dobson instrument at Syowa Station are compared with Nimbus 7 Total Ozone Mapping Spectrometer (TOMS) version 6 data for 1979 through March 1988. Generally speaking TOMS data show larger values of a few percent compared with Dobson data. Monthly averaged differences demonstrate a clear seasonal variation of summer maximum. This behavior was the same as my previous work in which Dobson data were compared with TOMS version 5 data over Syowa Station. My previous work also revealed a long term trend of difference due to TOMS version 5 data which have been affected by the deterioration of the diffuser plate attached to the TOMS instrument. No such long term trend is recognized in the present result which shows the superiority of the new calibration method adopted in the TOMS version 6 data analysis. However, the clear seasonal variation of difference between Dobson total ozone data and new version of TOMS data suggests a problem which may inherently exist in the TOMS data or Dobson data. This problem should be further examined. As for absolute value, as mentioned above, mean TOMS version 6 data are larger than Dobson data by several percent. This difference is larger than that of TOMS version 5.

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