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Comparison of total ozone from EP-TOMS and Dobson spectrophotometer measurements for Vernadsky station 1996-2005

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Comparison of total ozone from EP-TOMS data and Dobson spectrophotometer measurements for the Ukraine Antarctic Vernadsky station is presented. The total ozone content (TOC) data were derived from the Version 8 of the Total Ozone Mapping Spectrometer (TOMS) satellite observations and the ground-based Dobson spectrophotometer No 031 measurements. The period of this comparison is 1996-2005. The statistics for cloudy and clear sky observations is presented separately, in order to assess the cloudiness influence on the difference between satellite and ground-based measurements. The main finding obtained from this comparison is that TOMS the underestimates TOC in cloudy days, whilst it overestimates TOC in cloudless conditions. The 1996-2005 TOMS-Dobson difference for all data equals -2.0%, whereas in cloudless and cloudy conditions the difference is 4.1% and -4.5%, respectively. In comparison with the Version 7 the both differences are lowered (7.7% and -0.6%, respectively). However discrepancy between them remains the same, about 8%. The possible causes of the underestimates and overestimates are discussed.

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