



Comparison of ground-based and TOMS surface UV irradiances over Europe: the role of clouds and aerosols

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The Total Ozone Mapping Spectrometer (TOMS) instrument provides the longest time-series of global surface UV measurements. Satellite derived UV irradiances may form the basis for establishing a global UV climatology, provided that their accuracy is confirmed against ground-based measurements of known quality.

In this study quality-checked spectral UV measurements from four European stations (Bilthoven, Ispra, Sondankyla and Thessaloniki) are compared with TOMS Version 8 spectral UV irradiances. The impact of high spatial variability of aerosols and clouds is examined, in order to investigate the origin of any disagreements between the ground-based measurements and satellites estimates.