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Global scale UV trends derived from satellite UV erythemal products

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The amount of solar UV radiation reaching the Earth's surface increased during the last 30 years at mid-high latitudes because of the effect of the ozone decrease (from 1979 to 1998) combined with the cloud-aerosol reflectivity change.
During the last decades, satellite UV estimates became available for monitoring the UV level at surface and its effect on the human health and the terrestrial and aquatic ecosystems. TOMS, OMI and GOME-2 erythemal UV products were used to analyse the long term UV radiation and Total Ozone changes on global scale, in terms of zonal monthly average. The linear trends were calculated combining TOMS and OMI data, as a function of month and latitude-belt. Positive trends were observed, with higher values on the Southern Hemisphere at mid-latitudes during Spring-Summer, where the largest ozone decrease was observed. OMI and GOME-2 products were compared in order to analyse the sources of error in the global UV distribution and the differences in the trend calculation results. When GOME-2 UV products were used in the trend analysis, the results pointed out the differences in the inputs used in the algorithm, such as surface albedo, total ozone and absorbing aerosol information.