

The TROPOMI surface UV product

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The Finnish Meteorological Institute (FMI) is responsible for the development and processing of the surface UV product based on the S5P/TROPOMI satellite measurements. The processing is implemented as a part of the Finnish Sentinel Collaborative Ground Segment in Sodankylä, Finland, as an in-kind contribution to the S5P/TROPOMI product family by the FMI. The TROPOMI surface UV product contributes to the need of monitoring UV radiation by providing daily information on the prevailing UV conditions over the globe. The algorithm builds on the heritage of the corresponding OMI (Ozone Monitoring Instrument) and EUMETSAT AC SAF (Satellite Application Facility on Atmospheric Composition Monitoring) algorithms. The TROPOMI surface UV product includes the following UV quantities: the UV irradiance at 305, 310, 324, and 380 nm; the erythemally weighted UV; the vitamin-D weighted UV. Each of these are available as (i) daily dose or daily accumulated irradiance, (ii) overpass dose rate or irradiance, and (iii) local noon dose rate or irradiance. In addition, all quantities are available corresponding to actual cloud conditions and as clear-sky values, corresponding to otherwise the same conditions but assuming a cloud-free atmosphere. This yields 36 UV parameters altogether. Here we present the first results from the UV product processing.