



Operational trace gas column observations from GOME-2 on MetOp

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This contribution focuses on the operational GOME-2 trace gas column products developed in the framework of EUMETSAT's Satellite Application Facility on Atmospheric Composition Monitoring (AC-SAF). We present an overview of the retrieval algorithms for ozone, OCIO, NO₂, SO₂ and formaldehyde, and we show examples of various applications such as air quality and climate monitoring, using observations from the GOME-2 instruments on MetOp-A and MetOp-B.

Total ozone and the minor trace gas columns from GOME-2 are retrieved with the latest version 4.8 of the GOME Data Processor (GDP), which uses an optimized Differential Optical Absorption Spectroscopy (DOAS) algorithm, with air mass factor conversions based on the LIDORT model.

Improved total and tropospheric NO₂ columns are retrieved in the visible wavelength region between 425 and 497 nm. SO₂ emissions from volcanic and anthropogenic sources can be measured by GOME-2 using the UV wavelength region around 320 nm. For formaldehyde, an optimal DOAS fitting window around 335 nm has been determined for GOME-2. The GOME-2 trace gas columns have reached the operational EUMETSAT product status, and are available to the users in near real time (within two hours after sensing by GOME-2).

The use of trace gas observations from the GOME-2 instruments on MetOp-A and MetOp-B for air quality purposes will be illustrated, e.g. for South-East Asia and Europe. Furthermore, comparisons of the GOME-2 satellite observations with ground-based measurements will be shown. Finally, the use of GOME-2 trace-gas column data in the Copernicus Atmosphere Monitoring Service (CAMS) will be presented.