



Monitoring of volcanic SO₂ emissions using the GOME-2 instrument

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This contribution focusses on the GOME-2 SO₂ column products from the METOP-A and B satellites. The GOME-2 SO₂ column product has been developed in the framework of EUMETSAT's Satellite Application Facility on Ozone and Atmospheric Chemistry Monitoring (O₃M-SAF). Satellite-based remote sensing measurements of volcanic SO₂ provide critical information for reducing volcanic hazards.

Volcanic eruptions may bring ash and gases (e.g. SO₂) high up into the atmosphere, where a long-range transport can occur. SO₂ is an important indicator for volcanic activity and an excellent tracer for volcanic eruption clouds, especially if ash detection techniques fail. SO₂ can affect aviation safety: In the cabin it can cause disease and respiratory symptoms, whereas in its hydrogenated form H₂SO₄ it is highly corrosive and can cause damage to jet engines as well as pitting of windscreens.

We will present results for volcanic events retrieved from GOME-2 solar backscattered measurements in the UV wavelength region around 320nm using the Differential Optical Absorption Spectroscopy (DOAS) method. SO₂ columns are generated operationally by DLR with the GOME Data Processor (GDP) version 4.7 and are available in near-real-time, i.e. within two hours after sensing. Using data from both MetOp satellites allows for a daily global coverage.

We will furthermore present current improvements to the GOME-2 SO₂ column product.