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SO_2 plume height retrieval from UV satellite measurements in support to aviation control

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The Support to Aviation Control Service (SACS), operated at our institute, uses multi-sensor UV-visible and infrared satellite measurements to provide near real-time information on volcanic ash and SO_2 concentrations. In case of enhanced SO_2 concentrations, notifications are send out to subscribing organisations and individuals, with details regarding the volcanic event. This information may be used by aviation control organisations to judge the risc to air traffic and provide possible alternative routing.
One of the latest additions to the system is information on the altitude of SO_2 plumes, based on UV measurements of the GOME-2 sensors on the platforms METOP-A and METOP-B. Further improvement of this system is ongoing.
This poster shows examples of plume height retrieval from GOME-2 (METOP-A and –B) and OMI (EOS-AURA). Results are shown for a number of recent major volcanic eruptions, each with different characteristics. The applied technique to retrieve altitude information will be discussed, as well as the applicability, quality and limitations of the method.