



Global multi-sensor satellite monitoring of volcanic SO₂ and ash emissions in support to aviation control

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The “Support to Aviation Control Service” (SACS; <http://sacs.aeronomie.be>) is an ESA-funded project hosted by the Belgian Institute for Space Aeronomy. The service provides near real-time (NRT) global SO₂ and volcanic ash data, as well as alerts in case of volcanic eruptions. The SACS service is primarily designed to support the Volcanic Ash Advisory Centers (VAACs) in their mandate to gather information on volcanic clouds and give advice to airline and air traffic control organisations. SACS also serves other users that subscribe to the service, in particular local volcano observatories and research scientists. SACS is based on the combined use of UV-visible (SCIAMACHY, OMI, GOME-2) and infrared (AIRS, IASI) satellite instruments. When a volcanic eruption is detected, SACS issues an alert that takes the form of a notification sent by e-mail to users. This notification points to a dedicated web page where all relevant information is available and can be visualized with user-friendly tools. The strength of a multi-sensor approach relies in the use of satellite data with different overpasses times, minimizing the time-lag for detection and enhancing the reliability of such alerts.

This paper will give a general presentation of the SACS service, different techniques used to detect volcanic plumes. It will also highlight the strengths and limitations of the service and measurements.