



Including satellite data of SO₂ for volcano monitoring: recent results and perspectives.

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Measurements of SO₂ emission rates have, for about 30 years, been part of the standard toolkit of volcano observatories, initially as occasional measurements with the COSPEC instruments, and, since nearly 10 years, as permanent measurements by automated scanning DOAS. In the mean time, the progress in the performances of satellite has been considerable and some space-based sensors are now able to detect and quantify relatively low emissions of volcanic SO₂ by low intensity eruptions and passive degassing.

We will review published and unpublished satellite data of SO₂ emission over the last 10 years at various volcanoes, (Popocatépetl, Colima, Etna, Turrialba, Nyamuragira, Tungurahua, Kilauea among others), efforts to intercompare and validate these measurements, and detail the insights that we can gain from them for understanding degassing processes. We will highlight the advantages and limitations of using satellites, with an emphasis on their strong complementarity between space and ground-based data. Finally, we will present the perspectives offered by the sensors that are next in the launch pad.