



Sulfur evolution in a fresh volcanic cloud

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Estimations of sulfur mass in volcanic clouds have previously been done with imaging satellites observing light in either the UV or infra-red regions. In these regions, the mass of sulfur in gaseous SO_2 is measured. To obtain the SO_2 mass, these satellite instruments measure vertical column densities with low vertical resolution and have difficulties separating SO_2 in the stratosphere from the SO_2 in the troposphere. The CALIOP instrument, with its high vertical resolution, could provide additional accuracy. The CALIOP instrument is a lidar on the CALIPSO satellite and with a wavelength of 532 nm, which is efficiently scattered by the sulfate aerosol created from SO_2 gas. By using the altitude information from CALIOP the conversion of stratospheric and tropospheric SO_2 could be studied separately. This is useful since the two regions have different removal mechanisms for the SO_2 .