**Volcanic Degassing: from Magma to the Atmosphere**

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In the past two decades, immense progress has been made in understanding the physics of volcanic plumes. This has been extremely influential for many reasons, not least since it provides a link between observable phenomena and eruption dynamics, and a quantitative basis for volcanic risk assessment and mitigation. The time is ripe for comparable investigations of the chemistry of volcanic plumes. The radiative and chemical effects of stratospheric volcanic aerosols, such as those from the 1991 Pinatubo eruption, have received significant attention. On the other hand, the atmospheric impacts of sustained gas and aerosol emissions into the troposphere by many erupting or quiescent volcanoes worldwide remain poorly understood. This uncertainty arises from limited knowledge of sulphur and halogen fluxes, aerosol-cloud/precipitation interactions, and gas and particle deposition rates. Additional motivation to study tropospheric volcanic emissions arises from their significance as regional polluters and their impacts on the terrestrial environment and on human health. This presentation will examine the relationships between composition, flux, and style of volcanic volatile emissions to the troposphere and stratosphere, highlighting areas of uncertainty, and focus on recent field-based investigations into the tropospheric chemistry of volcanic plumes. Improved understanding of plume chemistry will contribute significantly to efforts to develop predictive models for the environmental, atmospheric, climatic and health impacts of volcanism.