



Volcano seismology in a wider volcanological context

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on sabbatical leave at: IPGP/Observatoire Volcanologique du Piton de la Fournaise,
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Volcano seismology has been for many years the major monitoring tool on active and dormant volcanoes alike. The ultimate aim is to detect changes in volcanic activity by identifying changes in the seismic behaviour in order to forecast an eruption, or in case of an ongoing eruption, forecast the short and longterm behaviour of the volcanic system. In recent years, volcano seismology experienced a major boost through the wide availability of high dynamic, broadband seismic equipment which has enabled seismologists to identify and separate distinct seismic signatures, some of which can now be interpreted in terms of different volcanic processes. A second boost arose from several attempts of multi-parameter volcanic monitoring and modelling programs, which allowed multi-disciplinary groups of volcanologists to interpret seismic signals together with ground deformation, gas release, and petrological information. This talk will give several examples of such multi-disciplinary projects, from first attempts to state-of-the-art. Examples will include the joint modelling of seismic source processes for tremor and low-frequency events together with advanced magma flow models, and the manifestation of magma movement at depth in the corresponding deformation and stress field at the surface. The volcanic settings comprise Soufrière Hills volcano, Montserrat, and Piton de la Fournaise, La Réunion, for an andesitic and basaltic volcanic end member, respectively. This talk will cover some general principles, lessons learnt, and the latest results, churned out between the deadline for abstract submission and start of the session.