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Influence of tectonic events on volcanic activity and implications for pre-eruptive warnings

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The occurrence of a tectonic event sufficiently close to a volcano and/or sufficiently energetic can trigger a change in its eruptive activity. In this presentation several examples of this interaction are presented. At Ambrym (Vanuatu), tectonic earthquakes are shown to trigger a significant increase of the permanent lava lakes activity. At Stromboli (Italy), examples are known in the past where local events had no influence whatsoever on the volcano but recently recorded events show an opposite behaviour, being able to modify the spectral and dynamical characteristics of volcanic tremor. On the island of Tenerife (Spain) a bidirectional interaction between tectonic events and tremor is one of the indications of possible unrest at Las Cañadas caldera. On Tungurahua (Ecuador) and Villarrica (Chile) other examples are shown where there is a clear increase of volcanic activity triggered by the occurrence of a tectonic earthquake. The challenges associated to the possible use of this interaction in the evaluation of the hazard of a given eruptive scenario are discussed.