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## Seismicity under a dormant volcano: unveiling active crustal faulting beneath Piton des Neiges, La Réunion

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Volcanic environments frequently generate seismic activity. This is the case for La Réunion island's two major volcanic edifices (Piton des Neiges and Piton de la Fournaise), where significant seismic activity is recorded. While the seismicity of Piton de la Fournaise can be easily explained by its volcanic activity (more than three eruptions per year since 2014), the seismic activity of Piton des Neiges (inactive for around 27,000 years) is still poorly understood. We improve the previously available seismicity catalog using template matching, double relocation and focal mechanism determination. Our results suggest that seismic activity beneath Piton des Neiges is probably caused by regional tectonic stresses and edifice loads on pre-existing faults, rather than from deep magma transfers. This conclusion is supported by the presence of several reverse faults with similar orientation and the lack of correlation between seismicity fluctuations and deep magmatic activity.

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