

Weekly report

Institut de physique du globe de Paris

Observatoire volcanologique et sismologique de Martinique

Activity of Mount Pelée

Saint-Pierre, October 3, 2025, 18:00 local time (GMT-4)

Volcanic activity has remained high this week, with **2585 volcanic earthquakes** observed.

Between September 26, 2025 at 16:00 (UTC) and October 3, 2025 at 16:00 (UTC), the OVSM has recorded:

- **2498 shallow volcano-tectonic** type earthquakes. Among them, 122 had a magnitude (duration magnitude M_d or local magnitude M_{lv}) greater than 0.5 and 24 had a magnitude greater than 1. The largest had a magnitude $M_{lv} = 1.95$. The others were of lower energy. These earthquakes are located at depths between 0.9 and 4.3 km below the summit of the volcano, as was the case during the previous week. A significant number of them originate from one of the well-known seismically active zones at Mount Pelée, located between 1.0 and 1.4 km below the summit of the volcano. Superficial volcano-tectonic seismicity is associated with micro-fracturing in the volcanic edifice related to the overall reactivation of the volcano observed since 2019.
- **64 shallow hybrid** type and **21 shallow long-period** type earthquakes. Among them, 22 have a local magnitude (M_{lv}) greater than 0.5, 5 have a magnitude greater than 1, and 4 have a magnitude greater than 2. The largest has a magnitude **$M_{lv} = 2.46$** . The others are of lower energy. These earthquakes are located in the same areas as the shallow volcano-tectonic earthquakes. The seismic signals of these types of earthquakes are enriched in (or contain only) low frequencies and are associated with the circulation of fluids (gas, hydrothermal fluids) in the volcanic edifice.
- **1 deep hybrid** type earthquake with a magnitude of $M_{lv} = 0.8$ located 23 km deep west of Mount Pelée; and **1 deep long-period** earthquake with a magnitude of $M_{lv} = 0.7$ located 18 km deep, also west of Mount Pelée. The seismic signals of these types of earthquakes are enriched in (or contain only) low frequencies and are associated with the circulation of magmatic fluids in the depths of the Mount Pelée volcanic system.

No earthquake was confirmed as felt by the population. However, several volcanic earthquakes have a magnitude close to that of earthquakes that could be felt by hikers on Mount Pelée.

The week before, the OVSM had recorded **2267 earthquakes** of volcanic origin. As of October 3, and during the last 4 weeks, the OVSM recorded a total of 6101 volcanic earthquakes, and an average of **1525 to 1526 volcanic earthquakes** per week.

The seismic energy released by volcanic earthquakes this week remains significant and is of the same order as during the previous week. The level of energy released by volcanic earthquakes over the last 14 days is the highest recorded since the reactivation began in 2019.

The depth of the hypocenters of volcano-tectonic earthquakes suggests that mechanical connectivity is beginning to develop between the very shallow parts of the volcano, where seismicity has been mainly concentrated until now, and deeper regions within the edifice, down to a depth of approximately 4 km below the summit of the volcano. Nevertheless, deformations of the edifice are very weak and, to date, show no marked inflation of the summit area or evidence of deformations associated with deeper sources. There is currently no evidence of fumarolic activity on Mount Pelée.



During phases of volcanic unrest on volcanoes similar to Mount Pelée, it is usual to observe seismic activity variable in intensity and frequency, which can evolve rapidly but also cease quickly without any major evolution of the system.

The probability of eruptive activity in the short term remains low. However, given all the observations collected since the end of 2018 and their nature, and based on the observations of the OVSM-IPGP summarized in the last monthly bulletin (August 2025) and the data recorded over the past 14 days, we cannot exclude a medium-term evolution of the situation (months, weeks). Given the inherent uncertainties in anticipating the evolution of volcanic processes, activity is closely monitored by the OVSM-IPGP which has strengthened its monitoring resources.

For more details on longer-term observations and interpretations of volcanic activity, please refer to the monthly bulletins of the OVSM. The September 2025 monthly bulletin will be published in the coming days.

The alert level, in accordance with the provisions planned by the authorities, is currently YELLOW: vigilance

The Director's office of OVSM-IPGP.

Informations

The data in this report are preliminary and subject to change depending on their subsequent analysis.

The reports of OVSM-IPGP, including detailed monthly bulletins, are available at <https://www.ipgp.fr/observation/ovs/ovsm/>.

You can also find us on our [Bluesky](#) et [Facebook](#) accounts. Locations of volcano-tectonic and tectonic earthquakes

determined by the OVSM-IPGP are available in real-time at <https://renass.unistra.fr/fr/zones/les-antilles/>.

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