



Debris Avalanche as a Potential Hazard of The Future Eruption of Guntur Volcano, Garut, West Java, Indonesia

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Guntur volcano (2,249 m a.s.l) is an active stratovolcano located in Garut, West Java, Indonesia. About 300,000 people are living in the southwest, south, and southeast foot of this volcano. The repose periods of this volcano are ranging between 1, 2, and 3 years, and up to 80 years. The eruptive history shows that the previous eruptions of Guntur produced pyroclastic flows, pyroclastic falls, lava flows, and ejected rock fragments. The latest magmatic eruption occurred in 1847. An eruption producing lava flows occurred in 1840. Seismic activities were increased several times since the latest eruption, but none of them end up with eruption. At present, its longest repose period has been proceeded. Since 1990 until 1998, the monthly numbers of earthquakes increased 20 times in average. The depth of hypocenters are 5-10 km below the Gandapura caldera. In shallower depth (0-5 km) the hypocenters are spread over below Mt. Masigit, Mt. Parukuyan, Mt. Kabuyutan, and Mt. Guntur. The deformation measurements carried out in this volcano suggest that the pressure source is located at a depth of 5-10 km southwest of the volcano. Summit observation at the Guntur volcano found an arching crack about 15 m wide that stretches across the summit area. Several fumaroles emitting bluish smoke with sulfur sublimate scatter around the holes were observed. The geologic data show that several small hills are found around the volcano indicating that a debris avalanche had occurred in the area during the previous activities. The presence of the crack on the summit area and the long repose period suggest a possibility of a future debris avalanche event at Guntur. The densely populated Garut town, nearest town of Guntur, may be devastated and totally covered by the debris avalanche deposit.