

Ash Risk Map and Mitigation Plans on Indonesian Aviation Service Using Geospatial Techniques (A Case Study of Bali Airport During Mount Raung, Agung, and Rinjani Eruption)

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Volcanic ash cause airports to alter or close their operations when it was detected around the airport and the flight routes. Bali airport is one of the busiest airports in Indonesia. Unfortunately, it is surrounded by three active volcanoes which have recently erupted and spewed volcanic ash. Even though volcanic ash movements can be predicted, these events always have the effect of surprises by causing many flight delays or cancellations that lead to enormous economic losses. This occurred because of the lack of preparedness and mitigation plans in dealing with this threat. To overcome this problem, a volcanic ash risk map was generated by combining flight route data, 30 years of wind data in various elevations, rainfall data in a different season, and volcanic ash trajectory data from three surrounding volcanoes namely Mount Raung, Agung, and Rinjani. The result shows that during the easterly wind season the risk of volcanic hazard was higher since the two most active volcanoes (Mount Agung and Rinjani) are located in the eastern part of this airport and during this season there is less rainfall that could wash the ash away. Therefore, appropriate mitigation plans can be established as well as airport collaborative decision making

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Promotional text

It could create volcanic ash risk maps in Bali. Then, it can be utilized to design an effective, efficient, and appropriate flight plan as well as a robust airport hazard mitigation plan

Oral preference format

in-person

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