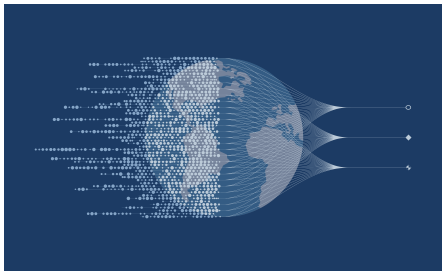

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tsunami disaster from volcanoes in Indonesia

Indonesia is at the forefront of earthquake and tsunami disasters due to tectonic and geological complexity. Non-seismic tsunamis caused by landslides and volcanic collapses have become an important new disaster issue in Indonesia since the 2018 Palu and 2018 Sunda Strait events. Based on VSI-ESDM (2024), a dozen active volcanoes were found on the coast and under the sea. Mount Gamalama is an active volcano in the Ternate region, North Maluku. Based on reports from Gamalama volcano monitoring officers, the potential for eruptions and landslides occurred following events in 2011 and 2012 where lava flows headed east. To carry out tsunami modeling, numerical modeling techniques can be used. Studying the nature of sea water motion requires a marine hydrodynamic model. We use the Cornell Multi-grid Coupled Tsunami (COMCOT) model which is based on the Shallow Water Equation (SWE) (Wang and Power 2011). We use national bathymetric maps with medium resolution. We took benchmark GPS stations and initial tide stations. Based on landslide scenario tsunami modeling, the results obtained were that a small portion of the caldera collapse on the northeast side resulted in a large tsunami as high as 11 meters.

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