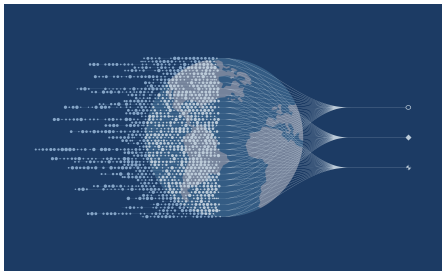

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# of tsunami hazard potential based on a submarine earthquake scenario M 7.4 in Buleleng Regency, Bali Province

Research on tsunami potential in northern Bali is rarely conducted. Most of the prior research was conducted in the southern region of Bali island due to its geographical location near the megathrust subduction zone. However, the earthquake-triggered tsunami may occur due to the existence of a Back Arc Thrust (BAT) zone in the north of Bali. A Back Arc Thrust (BAT) zone runs across the northern half of Bali Island and extends to Flores Island. Historically, Based on BMKG tsunami catalog for the period 416-2018, an earthquake-trigerred tsunami occurred in 1815 with an estimated magnitude of M~7.0/~7.3. This earthquake-tsunami event claimed the lives of 10,253 people in Singaraja and Buleleng. To mitigate tsunami risks in Buleleng Regency's coastal areas, a tsunami modeling analysis was conducted using the Tsunami Observation and Simulation Terminal (TOAST) software. The results indicate a Major Warning zone in eastern Buleleng with a 3.43-meter run-up and a 1-minute ETA (Estimated Time Arrival), and a Warning zone in the western part with a 1.921-meter run-up and a 4.5-minute ETA. The population density in areas of eastern Buleleng vulnerable to tsunamis is 2831 people per square kilometer, while western Buleleng has a density of 1683 people per square kilometer.

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