INTISARI

IDENTIFIKASI POTENSI PENGGENANGAN TSUNAMI DI PESISIR SELATAN PULAU JAWA

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Umumnya tsunami di Indonesia didahului dengan terjadinya gempabumi seperti yang terjadi di Pulau Jawa. Penelitian ini berfokus di wilayah selatan Pulau Jawa dan bertujuan untuk merelokasi hiposenter dalam mengidentifikasi celah *seismic gap*, menganalisis keaktifan kegempaan, kerapuhan batuan dan energi potensial, mengetahui potensi penggenangan tsunami serta memberikan rekomendasi awal tingkat kerentanan tsunami di pesisir selatan Pulau Jawa. Metode yang digunakan untuk mengetahui celah *seismic gap* merupakan analisis hasil relokasi hiposenter dengan algoritma *double difference*. Pemetaan nilai-a dan nilai-b digunakan dalam menganalisis keaktifan kegempaan dan kerapuhan batuan. Besarnya energi potensial dihitung berdasarkan metode *least-square* pengembangan Gutenberg dan Richer. Sedangkan potensi penggenangan dan tingkat kerentanan tsunami dianalisis berdasarkan simulasi skenario tsunami menggunakan model TUNAMI-N2 dan interpretasi ketinggian run-up dengan penggunaan lahan di pesisir wilayah terdampak tsunami. Celah *seismic gap* berada di selatan Kabupaten Malang, Lumajang, Jember dan Banyuwangi dengan besar energi potensial setara gempabumi mag 7.7 SR. Hasil simulasi pemodelan didapatkan ketinggian *run-up* maksimum mencapai 9.80 m dengan waktu tiba gelombang tsunami mencapai 16-30 menit setelah gempabumi simulasi terjadi. Wilayah tergenang terdapat di Kecamatan Puger, Gumukmas, Wuluhan, Ambulu dan Pesanggaran dengan tingkat kerentanan rendah hingga sedang untuk kecamatan Wuluhan serta tingkat kerentanan sedang hingga tinggi untuk Kecamatan Gumukmas, Puger, Ambulu dan Pesanggaran.

kata kunci : *seismic gap*, tsunami, tingkat kerentanan tsunami

ABSTRACT

IDENTIFICATION POTENTIAL OF INUNDATION TSUNAMI IN SOUTHERN COASTAL OF JAVA

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Generally, the tsunami in Indonesia was preceded by the occurrence of earthquakes such as in Java. This study focuses on southern coastal of Java and aims to relocate the hypocenter for identifying seismic gap, analyze the activity of seismicity, rock fragility and potential energy, knowing the potential tsunami inundation and provide to recommendation of tsunami vulnerability on the southern coast of Java Island. The method used to determine the seismic gap is analyzed based on results of hypocenter relocation in double difference algorithm. Mapping value-a and value-b are used for analyzing the activity of seismicity and rock fragility. The amount of potential energy is calculated based on the least-squares method development Gutenberg and Richer. While the potential tsunami inundation and vulnerability level was analyzed based on scenario simulation of tsunami using TUNAMI-N2 model and interpretation run-up with land use in coastal area demage by tsunami. Seismic gap located in southern of Malang, Lumajang, Jember and Banyuwangi district with potential energy is equivalent with earthquake in magnitude 7.7 SR. From modeling results is known the maximum run-up is 9.80 m and travel time of tsunami arrive in 16-30 minute after earthquake simulation occurred. The inundation area are district of Puger, Gumukmas, Wuluhan, Ambulu and Pesanggaran. The level of vulnerability in each district varies based on height of run-up tsunami. Low to moderate levels of vulnerability for Wuluhan districts, moderate to high levels of vulnerability for Gumukmas, Puger, Ambulu and Pesanggaran districts.

keyword : seismic gap, tsunami, tsunami vulnerability