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Analisa Dampak Potensi Gempa Bumi Megathrust Jawa Barat-Jawa Tengah di Kecamatan Cilacap Selatan, Jawa Tengah = Potential Impact Analysis Of The West-Central Java Megathrust Earthquake in Cilacap Selatan District, Central Java

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Abstrak

Kecamatan Cilacap Selatan merupakan kecamatan yang memiliki risiko besar untuk mengalami kejadian bencana tsunami. Letak wilayah tersebut berdekatan dengan celah seismik dalam area megathrust segmen Jawa Barat-Jawa Tengah yang apabila pecah diprediksikan menghasilkan tsunami. Penelitian ini bertujuan untuk menganalisa dampak gemba bumi megathrust segmen Jawa Barat-Jawa Tengah terhadap Kecamatan Cilacap Selatan melalui model tsunami yang dibuat. Model dibuat berdasarkan persamaan air dangkal (shallow water equations) pada perangkat lunak COMCOT v1.7. Dua skenario multi-faults dan single-fault dibuat dengan magnitudo acuan yang sama sebesar 8.7 Mw di mana hasil pengamatan dari kedua skenario menunjukan waktu tiba tsunami diestimasi membutuhkan waktu 43 menit, ketinggian genangan berkisar 0,5 – 24 meter, total luas area inundasi berkisar 1128,14 – 1145,4 hektar, dan ketinggian maksimum tsunami berkisar 11,476 – 13,054 meter. Kemudian, peta rawan bahaya tsunami untuk kedua skenario dibuat berdasarkan area inundasi tersebut dan dibandingkan dengan peta rawan bahaya tsunami oleh DLR & GTZ. .....The region of South Cilacap is known to experience natural disasters in the form of tsunamis. Their geographic location is near seismic gap zones in megathrust areas segmented in West-Central Java. It is predicted that the spit of the West-Central Java segment would lead to a tsunami. This research is conducted to analyze the effects of a megathrust earthquake in the West-Central Java segment in regards to the area of South Cilacap through the model tsunami. This model is based on the shallow water equations in the software COMCOT v1.7. Two scenarios, multi-faults and single-fault, is made with a reference magnitude of 8.7 Mw in which the results show that the arrival time of tsunamis is estimated to take 43 minunies, inundation height ranging from 0,5 – 24 meters, total inundation area ranges from 1128,14 – 1145,4 hectares, and the maximum tsunami height ranges from 11,476 – 13,054 meters. Then, tsunami hazard maps for both scenarios were made based on the inundated areas and compare it with the tsunami hazard maps produced by DLR & GTZ.