

ABSTRACT

MAPPING VELOCITY SHEAR WAVES (V_{s30}) USING MASW METHOD (MULTICHANNEL ANALYSIS OF SURFACE WAVE) KALABAHİ CITY DISTRICT ALOR EAST NUSA TENGGARA

By

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Kalabahi city and surroundings is an area that often hit by earthquakes, it is necessary to mitigation to reduce the risk of building damage due to the earthquake disaster. One of mitigation efforts earthquake disaster, by mapping vulnerable zones based on indicators of Peak Ground Acceleration (PGA), the site class with active MASW method. MASW is a method for geotechnical investigations based on Shear wave velocity of bedding rock near the surface. In this study MASW method used to determine the value of shear wave velocity and the depth in Kalabahi city area Alor East Nusa Tenggara Province. The mapping vulnerability of from some of wave based on the classification of rocks subsurface. The flow of processing data by editing geometry of raw data, then the data is transformed from time-distance domain into the frequency - phase velocity domain. Picking of velocity is done on spectrum dispersion curves the fundamental mode to get the dispersion curve. The dispersion curve then inverted to obtain the shear wave 1-D velocity profile with depth. The value of low shear wave ($V_s < 183\text{m/s}$) is indicative of weak soils its means the magnitude of the impact of the quake will be felt because of the quakes experienced amplification. So the buildings standing on this layer will be damaged than the buildings of other layer. An area that is vulnerable to amplification the quake kalabahi City, Wetabua, Nusa Kenari, Air Kenari, Binongko. Besides as earthquake mitigation, MASW method is also used for groundwater exploration and determination of landslide disaster zone in hilly areas.

Keywords: MASW active, shear wave velocity, amplification