ABSTRACT

HYPOCENTER RELOCATION OF SEMANGKO FAULT EARTHQUAKE IN LAMPUNG USING MODIFIED JOINT HYPOCENTER DETERMINATION (MJHD) METHOD

By

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Sumatera island one of the islands that is active in earthquake, because there is subduction Indo-Australia plate that come into Eurasia Plate, so that creates earthquake path in the Sumatera island Indonesia. One of the earthquake parameter that can be counted is hypocenter. This is very necessary in the analysis of tectonic structure in detail, such as for identification of fault zone also subduction zone. In this research, the author conducted hypocentre relocation to Semangko-fault earthquake in Lampung with using Modified Joint Hypocenter Determination (MJHD) method. Relocation with Modified Joint Hypocenter Determination (MJHD) method uses the IASP91 wave velocity which assumes if the structure inside the earth is heterogenous. Data that we used are arrival time P and S wave data and the depth limit is 60 km with total 76 earthquake events in period between 1 january 2013 to 31 december 2017 with coordinates of -4.5º LS 103.85º BT to -6º LS 106º BT. Relocation using MJHD method, it is known that the addition of station correction can reduce the effect due speed variation than are not modelled. The RMS (Root Mean Square) value after relocation is about < 1,5 sec which is concentrated between 0,1 to 1 second, while ranges before relocation > 1,5 sec. The result of relocation around Lampung Semangko-fault indicate that the zone has a high seismisity value. The result indicate that the earthquake which occurred in Lampung have hypocenter displacement where before relocation had average depth value 10 km to be concentrated at depth 4 km – 20 km through the semangko fault trend.

Keywords: Semangko Fault, Hypocenter Relocation, Modified Joint Hypocenter Determination (MJHD).