

2.3-P06. Characteristics of the Mw 7.1 Double Subduction Earthquake in Northern Moluccas, Indonesia (November 15th 2014)

Based on the tectonic setting in northern Moluccas, there is double subduction called Sangihe – Halmahera subduction zone. As a result of this double subduction activity, the northern Moluccas become a very active area of earthquakes. The historical earthquake data recorded that between the years 1600 – 2007 have occurred 2800 earthquakes and 10 tsunamis. On 15 November 2014 was occurred an earthquake with Mw 7.1 (USGS) in this double subduction zone. This earthquake generate small tsunami with maximum height was 9 cm that recorded at Jailolo, Halmahera. To find out more detail about the characteristics of this earthquake we perform the joint inversion using teleseismic and strong motion data from seismograph and accelerometer array network of InaTEWS. By the calculation we get the results that this earthquake has a oblique type (strike 30°, dip 30°, and rake 120°), the source duration was 18 sec, the fault length was 70 km, and width was 15 km, with seismic moment $M_0 = 2.78 \times 10^{19}$ Nm (Mw = 7.0). The maximum slip was 6.3 m with average of slip was 4.1 m. This earthquake occurred in the boundary between Sangihe and Halmahera subduction zone.

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Track Classification: 2. Events and their characterization