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tensor solutions of earthquakes in south of Sumba Island (Indonesia)

Potential of earthquake hazard in the south of Sumba Island (Indonesia) is poorly investigated. Tectonics of this region is proposed into two debatable models i.e. related to the subduction zone or due to collisional tectonics. During the year of 2015-2018, we find that the earthquakes in this region were sensitive to small stress perturbation dynamically imparted by large distant earthquakes. The earthquakes located in isolated ~60x30 km and secluded from most of the seismicity in the west of the Island. All of the seismicity analyzed here was activated after the occurrence of the 2018 Mw 7.5 Palu (Sulawesi) earthquake. We provided the source mechanism of M>4.8 earthquakes by means of moment tensor inversion utilizing three component local seismograms of BMKG. The method based on multiple-point source representation and iterative deconvolution. Our results required variance reduction between synthetic and observed seismograms should be > 70%. Our results indicated most of the earthquakes were shallow reverse faulting with the low dipping to the north and were generally agreed with the slab model and relocated seismicity by the previous study. Our study supported evidences that the shallow low dipping thrust faults are slightly more susceptible to surface wave triggering.

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