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Temporary aftershock observation for the 2004 off Sumatra earthquake at Banda Aceh

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Meteorological and Geophysical Agency of Indonesia (Badan Meteorologi dan Geofisika, BMG) conducted the temporal observation of the aftershocks of the 2004 off Sumatra earthquake. They placed only one station in Banda Aceh, but many earthquakes have recorded. We try to determine these hypocenters using single station, three-component waveform data. Hypocenters are determined by the Windows software DIMAS software. Epicentral distance and azimuth from station to epicenter are determined by S-P time and particle motion of the first P-phase, respectively. Since some waveforms are scale-out we determine magnitude by using duration time of the trace for all of the events.

Totally 72 hypocenters can be determined for the events during the period from December 29, 2004 to January 9, 2005. Magnitude of the 18 events are larger than 4. Almost all of the hypocenters are located at the north of the Banda Aceh station. These events seem to be concentrated at the portion that small dislocation of the fault slip in main shock (Yamanaka, 2005). It may indicate that these aftershocks are as the rupture of the remained portion in the main shock slip. These data is very important in the clarification of this earthquake due to the lack of the seismic network for micro earthquakes around the region.

References

[1] Yamanaka, Y, http://www.eri.u-tokyo.ac.jp/sanchu/Seismo_Note/2004/EIC154.html (2005).