

# Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

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HDS026-03

Room:101

Time:May 22 14:45-15:00

## Magnitude of the Mentawai, Sumatra earthquake Tsunami of October 25,2010

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Recently, many tsunamis have been generated in the Sumatra region, Indonesia. The earthquake (Mw7.7) occurred near Pagai Is., Kep. Mentawai (3.484S, 100.114E, USGS) on October 25, 2010. A tsunami ran up 5-7m at the Pagai Is. (Satake et al.,2010) and killed 408 persons. The tsunami widely observed in the Indian Ocean (Semi-amplitudes: Padang 35cm, Tanahbalah 25cm, Cocos Is. 20cm, Port Luis 29cm, Marion Is., S. Africa 44cm and Port Elizabeth 23cm (WC/ATWC, NOAA). According to the inverse refraction diagram, the estimated tsunami source is 300km length, lapped over the source area of the 2007 Sumatra tsunami (m=2) along the 2000m-depth counter line. Judging from the attenuation of tsunami height with distance, tsunami magnitude is determined to be m=2. The tsunami grade is normal comparing with earthquake magnitude. Amplitudes in the south Africa region are large for the mean tsunami magnitude. It suggests the effective energy is projected toward the SW direction. The distribution pattern of amplitudes were similar to that of the 2007 tsunami.

Keywords: Tsunami magnitude, Wave-height deviation, Tsunami source