

Japan Geoscience Union Meeting 2011

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

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SSS025-P02

Room:Convention Hall

Time:May 27 10:30-13:00

Slow rupture velocity of two Indonesia earthquakes

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The 17 July 2006 Mw 7.8 Java earthquake and the 25 October Mw 7.8 Sumatra earthquake are the two typical tsunami earthquakes. We used modified back projection method to trace the rupture velocities of the two earthquakes. Weighting based on smoothed envelopes of a small earthquake recordings, is introduced when the waveforms are summated. The used small earthquakes have the same locations and focal mechanisms with the two tsunami earthquakes.

The result shows a clear and unusual slow rupture velocity (1-1.5 km/s) for these two earthquakes. The reason for this extraordinary slow rupture velocity is not well known now. But the two earthquakes occurred at the shallow portions of the subduction zone, somehow suggesting a very close relation with the unique hydrologic properties.

Keywords: rupture velocity, back projection, tsunami earthquake