



Temporal distribution of moment release of large earthquakes inferred from long period body wave data

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Hara (2004) showed that it is possible to determine temporal distribution of moment release of large earthquakes using long period body wave data (50-100 sec) in his analysis of the 2003 Tokachi earthquake. In this study, using the same technique, we determined the temporal distribution of moment release for September 5, 2004 Off Tokaido earthquake (origin time: 14:57:18 UTC; location: 33.15N 137.04E; depth: 10km; Mw: 7.4 after USGS). For the first 20 sec during the rupture, the strike slip component can be seen, while the reverse fault is predominant during 25-40 sec. The temporal resolution in this analysis is about 20 sec (± 10 sec), and it is possible to detect such a temporal change of source mechanism. Our result implies that this earthquake is the compound event consisting of two different source mechanisms. We discuss the possibility to automate our procedure and apply it to systematic detection of changes of source mechanisms.