



Large-amplitude Moho reflections (SmS) from the Taiwan Strait earthquake of 30 May 2004

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A moderate earthquake ($M_L 4.5$, $M_W 3.8$) occurred on 30 May 2004 in the Taiwan Strait, approximately 60 km to the southeast of Kinmen. This earthquake was not only recorded by the CWBSN stations but also by the Broadband Array in Taiwan for Seismology (BATS) stations. The broadband waveforms recorded by the Kinmen station (KMNB) show several distinct seismic arrivals in addition to the direct P and S arrivals. Especially, a large-amplitude phase can be recognized after the direct S wave on the three-component seismograms. However, the broadband waveform at the Penghu station (PHUB), in the opposite direction to Kinmen, shows clear direct P and S wave arrivals but without a prominent phase after the direct S wave. Comparisons of the recorded waveforms with synthetic seismograms indicate that the large-amplitude phase after the direct S wave is the S-wave reflection (SmS) from the Mohorovicic discontinuity (Moho) between the crust and mantle. The large-amplitude SmS phase is produced by the simple crustal structure of the western Taiwan Strait that allows a large Moho reflection. In contrast, a dipping Moho or more complex geologic structure toward the eastern Taiwan Strait may diminish the amplitude of the Moho reflection.