

Characteristics of the PL waves observed by the borehole strain and stress meters of Tono Research Institute of Earthquake Science

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We deployed the network of the borehole strain and stress meters in the Tono region in Japan. We found that we could observe the long-period ground motion between P and S waves arrivals in the strain and stress records from some large earthquakes. The dominant periods of these long-period ground motions range from about 10 seconds to 30 seconds. Because these periods are shorter than the typical periods of the W phase (100 –1000 seconds order), these long-period ground motions are not W phases.

We also found these long-period ground motions between P and S waves arrivals in the F-net seismograms. While we clearly found these waves in the radial components, it was difficult to find these waves in the transverse components. Because of this observation, we consider that the long-period ground motions between P and S wave arrivals are PL waves.

In order to clarify the causes of the differences of these PL waves, we estimated the dominant periods of the PL waves observed by the strain and stress meters in our network for many large earthquakes in Japan. We will present the results obtained from this analysis.

Keywords: long-period ground motion between P and S arrivals, PL waves, strainmeters, stressmeters, borehole