

Sp-waves converted at the upper boundary of subducting plate beneath Southern Kyushu, Japan

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We found X-phase in seismograms from deep focus earthquakes occurred beneath Izu-Bonin recorded at Southern Kyushu, Japan. This phase is characterized by the appearance at almost all seismic stations, precursors to S-wave arrival and predominance in vertical component in seismogram. It is confirmed that this phase is Sp-wave converted from S-wave at the upper boundary of subducting plate beneath Kyushu. The upper boundary of subducting plate is estimated at the depth range from 20 to 120 km by comparing Sp-S time with calculated one. It is revealed that the intermediate-depth earthquakes shallower than 80km in depth occur near the upper boundary of plate. At the depth deeper than 80km, the dip of upper boundary of plate is estimated to be more gentle than the Wadati-Benioff seismic zone.

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