

P-wave velocity anisotropy in oceanic lower crust near the Ogasawara Plateau

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Ogasawara Plateau which is a large plateau with a radius of 150-200 km on the northwestern Pacific Basin is located near the plate boundary to the Philippine Sea Plate. Our multi-channel seismic surveys revealed that the Ogasawara Plateau is not wholly subducting under the Philippine Sea Plate and is colliding to an edge of the plate. Flat seafloor to the southeast of the plateau preserves magnetic lineation patterns indicating presence of oceanic crust in the area. From the result of seismic refraction surveys with ocean bottom seismographs and multi-channel seismic reflection surveys conducted on survey lines perpendicular (OGr13) and parallel (OGr16) to the magnetic lineation.

Though an average P-wave velocity in a lower crust of a constructed OGr13 velocity model is 6.9km/s, a constructed OGr16 velocity model shows an average P-wave velocity of 6.5 km/s in a lower crust involving seismic velocity reversals.