

Three-dimensional P and S Wave Velocity Structure beneath Ryukyu Arc

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Three-dimensional P and S wave velocity structure beneath Ryukyu arc was determined by the seismic wave travel time tomography. Then, we used many data observed by temporary observations in the sea area as well as those by routine observations. Results obtained in this study are as follows. It is effective to conduct inversions by explicitly defining the high-velocity Philippine Sea plate. Just beneath active volcanoes, P and S wave low-velocity zones exist at 10km depth, and high Poisson zones at 30km depth. P and S wave low-velocity zones exist in the wedge portion of the upper mantle above the high-velocity Philippine Sea plate subducting beneath this region. Along the Okinawa Trough which is a back-arc spreading zone, P and S wave low-velocity zones exist at 40km depth. Large shallow earthquakes seem to occur around P and S wave low-velocity zones.