

Spatio-temporal distribution of v_p/v_s values in crust along Japan revealed by Wadati diagrams

Yuko Higashi[1]; # Atsuki Kubo[2]

[1] Dist. Prev., Nat'l Sci., Kochi Univ.; [2] KEO

We determine v_p/v_s ratio using Wadati diagrams for shallow earthquakes along Japan. Since in Japan dense seismograph network is available with average spacing about 30km, then we may detect v_p/v_s heterogeneity with longer scale than this spacing. We analyze all shallower events (less than 21km: Jan 1997- Oct 2007) which have more than 5 plots in Wadati diagram within S-P time less than 8s. We adopt high precision results (error in slope of Wadati diagram is less than 0.015). Total results show the peak 1.68 and histogram is steeper in larger than this peak.

As a large scale variation, v_p/v_s is lower in Tohoku, central Japan, and larger in Chugoku and Kyushu district. Most clear anomalous distribution is obtained for just beginning of 2000 Miyakejima dyke intrusion event(1.75-1.80). For large earthquake occurrence, v_p/v_s distribution expanding both larger and smaller. However shapes of the distribution before and after the events don't show significant difference. Only small decreasing features after large events found for Fukuoka, 2005; Chuetsu, 2004. This variation is close to accuracy limit. In this study, we estimate average distribution of v_p/v_s values in Japan and its regionality.