

Fluids in the subduction zone: thermal dehydration process and seismic velocity in rocks

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<http://psmac0.ess.sci.osaka-u.ac.jp/matsudalab-j.html>

Many previous studies have indicated that high temperature and also H₂O fluid are present in the subduction zone, causing island arc magmatism. Beneath the northeastern Japan arc (one of the typical subduction zones), both P- and S-wave velocity structures are recently determined in good spatial resolution by using seismic tomographic method. Those velocity structures are compared with laboratory velocity data to investigate temperature and fluid distribution in the subduction zone. The regions of high temperature and/or high H₂O content are discussed with active volcanoes, low-frequency microearthquakes, large crustal earthquakes, S-wave reflectors, and active faults observed in the northeastern Japan arc.

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