

Elastic wave velocity measurement of hornblende gabbro in Tanzawa at high pressure and temperature

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Partial melting might reduce the seismic velocity of crustal materials. In order to estimate degree of partial melting in the low velocity anomalies, it is important to evaluate the effect of melt fluids on the elasticity of crustal materials. Here we measured elastic wave velocities of hornblende gabbro from Tanzawa Mountain up to 800 degrees C at 1.0GPa. The experiments were carried out using ultrasonic technique in a piston cylinder type high-pressure apparatus. The P wave and S wave velocity measurements at 1.0 GPa in hornblende gabbro from Otanzawa(OOT) yielded $V_p = 7.07$ km/s to 6.62 km/s and $V_s = 3.81$ km/s to 3.56 km/s with increasing temperature from 25 degrees C to 800 degrees C. V_p and V_s determined for hornblende gabbro from Doushi(DOU) are 7.12-6.69km/s (V_p) and 3.79-3.42km/s (V_s), respectively at 1.0GPa. The poisson's ratio increases significantly from 500 to 600 degrees C.