

## Fracture and deformation properties of basaltic rocks under high temperature and pressure in various strain rates

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In order to understand the mechanical properties and to clarify fracture mode of basalt under various strain rates, high temperature and pressure, a new triaxial compression apparatus was prepared.

Although the strain rates of this study were limited, strain rate dependence of strength, axial strain at failure, Young's modulus, and Poisson's ratio at 200 were less than their values at room temperature. Furthermore, the observed fracture type at room temperature is characterized by zonation of shear planes under higher strain rate whereas concavo-convex of shear planes under lower strain rate. On the other hand, at 200, deformation is more plastic at 200 than that at room temperature. These results became an index of mechanical properties of basalt in mesoscopic structure.