

# Strain rate changes during deformation using tri-axial test device with loading rate controlled shear tests

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To say nothing of the importance of shear strain rates, many experiments had been done to consider the fault behavior. Rather, major interests were important behaviors of sliding, which were stable or not. However for soft sediments, the regimes before forming shear plane could be reached to considerably higher strain without forming major shear plane. There was little interest in the regime of this acceleration until shear plane forming, because in case of hard rock, the regime has passed in an instant. To grasp the change of strain rate and the pore pressure during this regime, the experimental study had done using tri-axial compression test device that could control loading rate. Several kind of clay samples were used for the experiments. The results of experiments were (1) rapid increase of strain rate without pore pressure change, and (2) gradual increase with pore pressure increment. These could be corresponded to dilatant shear fracturing and collapsing at shear plane, which would be common for the sediments that are undergoing shear.