

## In-situ stress at the vicinity of an active fault measured by overcoring using intelligent type strain meter

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It is important to investigate a relationship between active fault and earthquake occurrence. Prof. Ando as a chief proceeded a frontier project investigating active fault for that. In the project a vault with 480m length starting from inside of Kamioka mine in Gifu prefecture was constructed across two crushing belt of active fault called Mozumi-sukenobu fault. We performed in-situ stress measurements by using intelligent type strain meter developed by us based on multi-component borehole instrument also developed by us. The instrument is equipped with SRAM, RTC, A/D converter, MPX, a microprocessor, and batteries inside of the strain meter. A 10m depth borehole was dugged at a place of about 100m from one of the crushing belt. The instrument was firstly installed into the borehole by tightly coupling with basement rock using expansive grout. Then, after the instrument was fixed with basement rock by hardening of expansive grout (about one week later after installation) we overcored the rock surrounding the grout with the instrument inside. By doing so initial stress acting to the instrument was released and data of strain variation through the overcoring could be stored in a memory in the instrument. We could calibrate the instrument by using water pressure vessel. We could derive strain variation data from the instrument by connecting it with a personal computer. Initial stress in the place was obtained by analyzing the observed data. Directions of principal stress almost coincides with strain direction of WNW-ESE compression obtained from triangulation survey performed by G.S.I. We will also discuss magnitude of stresses. After overcoring we installed a strain meter with three horizontal components, a vertical component and high sensitivity temperature, and continuous data have been accumulated. The results obtained from it will be reported elsewhere.