

Outline and results of the Mizunami Underground Research Laboratory Project aiming at crystalline rocks

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In order to further expand the geoscientific research that has been conducted in the Tono mine and the neighborhood, the JNC has decided to forward the MIU project aiming at granite, one of the crystalline rocks widely distributed in Japan, as the main study object in Mizunami City. By repeating a series of approaches consisting of survey, prediction and verification of the underground geological environment, the project is aimed at confirming step by step the validity of the methodologies to survey and assess the geological environment with a high precision and efficiency on the surface- and underground-base. The whole project is divided into the following three stages and extends over about 20 years including the period of excavation of study drifts:

1st Stage: Surface-based preliminary investigations;

2nd Stage: Underground studies with excavation of drifts;

Stage 3: Underground studies utilizing drifts.

In the 1st Stage are estimated the geological environment at the depth as well as the effects of research drifts excavated in the 2nd Stage on them by the surface-based investigations.

In the 2nd Stage is verified the validity of the prediction of the geological environment and the effects of drift excavation on them by investigations simultaneous with the excavation. Besides, the geological environment expected to occur in the drifts excavated in the Stage 3 are also forecasted.

In the Stage 3 not only are acquired detailed data on the geological environment in research drifts but the validity of the geological environment forecasted in the 2nd Stage is also ascertained. Simultaneously, the usefulness of engineering techniques at depth is verified, too.