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Introduction of a test measurement for a monitoring technology inside a large-scale civil engineering structure using muon radiography

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Introduction
The technology that enables us to observe the internal structure of a volcano and the city foundation is being developed by utilizing the muon's significant penetration power. From the possibility to use this technology for the surveillance inside a large-scale civil engineering structure, we are planning an experimental measurement.

General Instruction
A final target is safety judgment of the condition of a large-scale civil engineering structure. It is important for safety judgment to grasp the internal density contract, such as the crack and slack levels of a base rock or the structure, and degradation and groundwater levels.
However, feasibility of application of muon radiography to monitoring inside the large-scale civil engineering structure has not confirmed yet. Therefore, as a test experiment, we attempt to measure the fluctuation of the groundwater level in order to evaluate and examine the method.
Measurement will be carried out from the inside of a scupper tunnel in the base rock. The result will be compared with the independent groundwater level measurement in order to perform quantitative evaluation of muon radiography.
In addition, this test measurement will start the near future. About a detailed plan, it is under examination now.