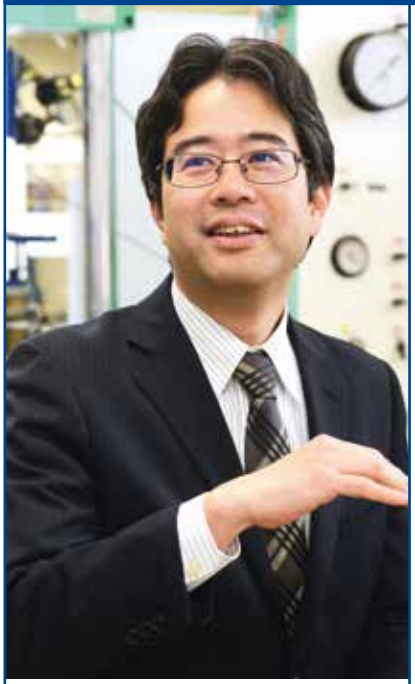
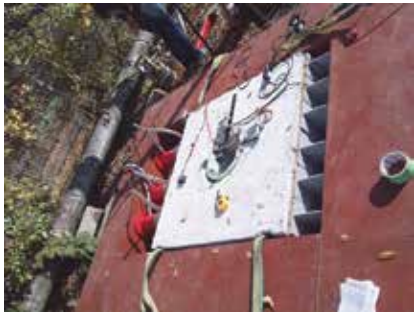


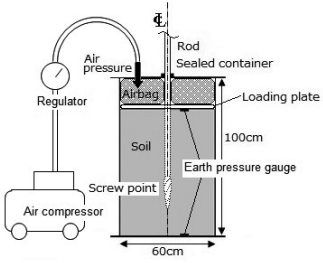
Assoc. Prof.
SHIBATA Toshifumi

Interacting behaviors between ground and tunnel lining with voids

The maintenance of damaged irrigation tunnels has become a major social concern; and thus, evaluating the damage conditions of current tunnels is of crucial importance. Voids behind the tunnel lining may be created during or after construction by the conventional method, and these voids are the main factors in its failure. Hence, it is imperative to comprehend the behaviors of the ground, the tunnel lining and the voids. We investigate the interacting behaviors between the ground and a tunnel lining with voids by numerical simulation and model tests.



Soil classification and correlation between Swedish weight sounding test results and strength parameter



Characterizing the properties of soils is of importance due to design and maintenance concerns. These properties are generally evaluated by laboratory and in-situ tests. Swedish weight sounding (SWS) tests are field tests used to obtain the static penetration resistance. From the value of the resistance, the N-value, the unconfined compressive strength, and the bearing capacity can be computed in order to evaluate the soil strength. However, the strength parameters, such as cohesion and the angle of internal friction, is not presented. We investigate the soil classification and the correlation between the SWS test results and the strength parameters.