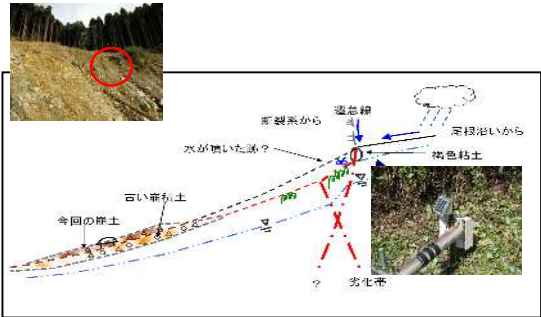
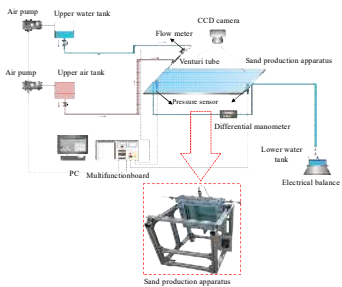


Name JIANG Yujing	Job Title Professor	Area of Expertise Rock Engineering, Geotechnics for Hazard Mitigation
1. Main Research Topics Many critical facilities, from underground repositories for high-level radioactive waste to energy storage systems, road tunnels, underground spaces, and bridge foundations, are constructed within or on rock masses. Evaluating the mechanical and hydraulic properties of rock materials, as well as monitoring and assessing their behavioral changes during operation, is crucial and indispensable. Our research group has long been engaged in prototyping a series of mechanical testing apparatuses and improving a three-dimensional nonlinear stress-permeability numerical analysis model suitable for fractured rock materials, with ongoing applications to real-world projects. Even slopes that are stable under normal conditions may face collapse risks due to rainwater infiltration. We are advancing the slope hazard monitoring technology utilizing wireless network communication, as well as the construction and practical implementation of a disaster prevention for steep slopes. Fundamental research and technological development related to deep-sea methane hydrate (MH) production and marine environmental assessment are being actively pursued both domestically and internationally. Additionally, considering sand production mechanisms from MH layers during extraction, mutual interference between production wells, and the triggering conditions for large-scale submarine landslides, we are conducting research and development on efficient production technologies that consider marine ecosystems. The main research themes are as follows: ① Evaluation technology of supporting safety and soundness of rock structures ② Prevention and risk mitigation of slope failures caused by heavy rainfall ③ Methane hydrate production technology and impact assessment on the seabed environment  Inspection and diagnosis of tunnels  Remote monitoring of landslide  Sediment discharge control in deep-sea MH layers		
2. Keywords Rock structure, Maintenance and management, Hazard mitigation, Methane hydrate production		
3. Remarks and Websites Through collaborative and commissioned research, we have been involved in numerous practical projects. Examples include: Construction of underground structures for pumped-storage power plants (Kyushu Electric Power Co., Inc.), In-situ foundation behavior assessment for nuclear power generator installation (Kagoshima), Evaluation of fractured rock properties for new bridge foundations (Kumamoto), Development of disaster prevention/mitigation databases and hazard assessment for steep urban slopes (Nagasaki City), Slope behavior monitoring in landslide-prone areas (Nagasaki Prefecture). While new construction projects are declining, there is growing demand for: Integrity assessment and repair/strengthening of existing infrastructure, Ground disaster prevention/mitigation in slope-heavy urban areas like Nagasaki, Countermeasures against large-scale sediment disasters caused by extreme weather events. Proven experience in remote monitoring technologies and risk management database development, Over 10 years of field investigations and diagnostics for road disaster prevention as a TEC-DOCTOR for the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) Kyushu Regional Development Bureau. We actively engage in R&D and provide technical consultations to address these societal challenges. researchmap : https://researchmap.jp/read0043363 Laboratory : http://www.cce.nagasaki-u.ac.jp/~jiban/		