

**Fundamental Study on the Remote Vibration Measuring System
for Evaluating Rock Slope Stability**

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This paper introduces a fundamental study on the evaluation method of rock slope stability by applying a non-contact vibration measuring system termed as “U-Doppler” that has been developed by the RTRI. Recently, some techniques for rock slope evaluation by means of vibration measurements have been developed. Those techniques apply the vibration characteristics of rock block such as predominant frequency and accumulated amplitude as a risk assessment index of rock block falling; however, involve the dangerous measurement works on a steep rock slope. Adoption of a long-distance remote measurement method enables to improve the efficiency and safety of the measurement works. Then, the authors have found that the U-Doppler worked satisfactorily as one-component geophone, and developed the prototype of 3D measurement system using U-Doppler sensors and wireless LAN.