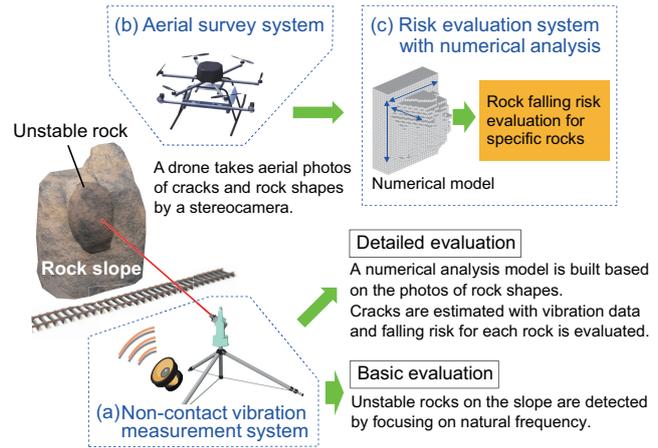


RTRI develops new risk evaluation system for falling rocks with laser beam and drone

RTRI developed a new risk evaluation system for falling rocks in order to help prevent the damage by rocks falling from trackside slopes. This system uses laser vibration measurement technology and drone survey technologies. It consists of three subsystems (see drawing on the right). Our system enables us to detect unstable rocks safely and efficiently from a distance.

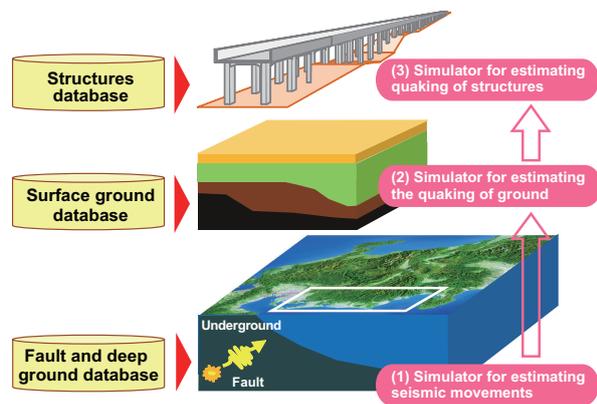
This methodology has been used to test rockfall risk evaluations on real rock blocks. Work will continue on the verification and improvement of the criteria for rockfall risk. Part of this development project was implemented with the subsidy of the Ministry of Land, Infrastructure, Transport and Tourism for railway technical development.



Overview of the new risk evaluation system for falling rocks

RTRI develops a Railway Earthquake Disaster Simulator

The Center for Railway earthquake Engineering Research of RTRI has developed the “Railway Earthquake Disaster Simulator” that can estimate the extent of quaking in a broad area and the resultant damage to railway structures in the event of an earthquake. This simulator can contribute to the formulation of anti-seismic measures, early restoration and evacuation plans. The simulator aggregates data of (1) location and scale of earthquake faults, (2) characteristics of deep ground and surface ground all over Japan, and (3) specifications such as type, height and anti-seismic performance for major viaducts and bridges in respective databases. Based on these data, the system can estimate the damage to structures caused by a certain earthquake on a super computer in a time period which is short enough for practical purposes.



Configuration of the Railway Earthquake Disaster Simulator

Start of a New Joint Study by RTRI and DB Systemtechnik

Since September 2014, RTRI and the DB Systemtechnik (DBST) have been working together on the study of micro-pressure waves in tunnels. Recently, the “Expert Exchange on Micro-pressure Waves” was organized to present an overview of the results of the joint study. Also, a research and development management meeting was held to discuss future cooperative studies. In this meeting, RTRI and DBST agreed to start a new joint study for the assessment and improvement of brake performance. On September 22, 2015, Dr. Kumagai, the president of RTRI and Mr. Lang, the president of DBST signed the agreement on the joint study. Both parties agreed to further expand and reinforce their cooperative efforts specifically in the fields of collision safety, risk analysis and assessment, and efficient maintenance.



Signing the joint study agreement on brake technology