

Development of “U-DOPPLER” Non-Contact Vibration Measuring System for Diagnosis of Railway Structures

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The non-contact vibration measuring system as termed “U-Doppler” newly developed by RTRI hereby introduced. In the field of monitoring of railway structures, the dynamic characteristics estimated by vibration measurements are applicable to evaluate the structural integrity. If the long-distance remote measurement method with the U-Doppler is adopted, it is possible to improve the efficiency and safety of the measurements, since it is unnecessary to install sensors and cables at locations high above the structures and remove them later. In this report, the author first introduces the outline of U-Doppler. Next, the author verified the accuracy of the U-Doppler with the results of laboratory experiments, the microtremor measurement of rigid-frame viaduct, and the deflection measurements of bridge girders.