

**Automatic Identification Method for Natural Frequency of Bridge Piers by
Microtremor Measurement at Both Sides on the Bridge Crown**

Satoshi WATANABE Takenori KEYAKI Naoto NAITO
Tomoki YUASA

The natural frequency of the bridge pier is used as an index to evaluate the soundness of pier foundation. However, it is sometimes difficult to obtain the natural frequency derived from microtremor, because the peak of the Fourier spectrum of the bridge piers derived from the microtremor does not appear clearly in many cases compared with that derived from the impact vibration test. Furthermore, conventional approaches based on microtremor always require the latest natural frequency derived from the impact vibration test. Therefore, we proposed a method that can automatically identify the natural frequencies only derived from microtremor measurement results at both sides on the bridge crown, without the latest result derived from the impact vibration test.