

## **The Construction for Monitoring System of Damage Level of Viaducts in Huge Earthquakes**

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When a huge earthquake occurs, we should inspect the damage level of railway viaducts. But, we may have a lot of downtime to check it. So, to evaluate the accurate damage level and to decrease the downtime, we proposed a new monitoring method for measuring the maximum angle of columns and the dominant frequency of viaducts a remote location, and separating the dominant frequency of the effects of substructures from that of columns. In this paper, we report on an original sensor we developed for measuring the maximum angle of columns and the loading test we conducted using a half-sized viaduct with its substructure and columns damaged to evaluate the dominant frequency. From the results, we confirmed the effectiveness of this new monitoring method.