THE IMPLEMENTATIONS OF DAMAGE DETECTION SCHEME TO A SKEWED BRIDGE BASED ON THE HEALTH MONITORING AND THE NUMERICAL EVALUATION

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ABSTRACT : In the past few years, due to the aging and the function loss of transportation facilities, the serious incidents have occurred all over the world. The importance of the maintenance of transportation facilities has been fully recognized. Because of the oversights in the field survey resulting from the unintentional omissions, however, it is difficult to detect the deterioration of the structural elements by the visual inspection of bridge structure. It is required to simplify the verification of health condition and to make it possible to predict the deterioration of bridge structures with high precision.

A lot of skewed bridge has been constructed at the site where it is important to maintain a relatively straight alignment of a roadway. Due to the torsional effects as a result of skew geometry, however, it is so difficult to simulate the dynamic response of the skewed bridge intended for the verification of the health condition. This paper shows the possibility of the implementations of the damage detection scheme to a skewed bridge, based on the health monitoring and the numerical analysis of dynamic response under the passage of the vehicle on the bridge.

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