Earthquake Damage Evaluation Method of Viaduct Group by Measurement of Response Angle of Columns

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We have developed a sensor to measure a level of damage caused in columns of railway RC rigid-frame viaduct during earthquake,and evaluated its measurement ability through static and dynamic experiments.However,to detect the damage level of a structure group of a long length efficiently,we should appropriately select positions where damage level sensors are to be set up. In this study, we executed numeric analysis using design earthquake motions and real earthquake waves for 4 model lines of about 5km length which were selected from the real Shinkansen viaduct group.As a result,we clarified that presumption error of damage level was almost within 20% when 4 sensors were used for each model line.