

A Study on Train-Running Quality during Earthquake for PC Extradosed Bridge

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Many PC extradosed bridges have been constructed for roadways as rational long span bridges. The authors carried out a study on train-running quality during earthquake, using data for a roughly designed PC extradosed bridge for high-speed railway. A simulation program, DIASTARS II was used in this analysis. In this program, the Shinkansen vehicle is of a three-dimensional model as having a body, two trucks, and four wheelsets connected to each other by springs and dampers. The structures are modeled by three-dimensional finite element method. In this study, the authors analyzed numerically dynamic behavior of the train and the bridge, and clarified the following items: Firstly, the train-running quality on the bridge becomes lower on girders in the middle of the bridge. Secondly, folding displacement at edges of the bridge did not largely affect the train-running quality.