**SEISMIC ISOLATION DESIGN OF THE MAIN BRIDGE OF SONGPU BRIDGE**

**DOI 10.37153/2686-7974-2019-16-871-871**

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**ABSTRACT**

The main bridge of Songpu Bridge was a long-span steel truss girder bridge. Due to the increased traffic pressure, the upper deck needs to be widened to six lanes, and the lower deck needs to be changed into non-motor lanes and sidewalks. However, the load capacity of the old pile foundations cannot be retrofitted due to real situation. Therefore, it is necessary to carry out the seismic analysis for the bridge. The friction pendulum bearings are used in the seismic isolation design and the analysis results show that the friction pendulum bearings applied in both schemes, i.e. the whole bridge isolated, or only continuous pier isolated, can achieve great seismic isolation effects, while the latter is more economical than the former. Meantime, the seismic responses of the main bridge with different parameters of the friction pendulum bearings are compared to come up with the reasonable seismic isolation design for the main bridge.

*Keywords: Songpu Bridge; friction pendulum bearing; seismic isolation design; seismic response*

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