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Study on Seismic Response Feature of Multi-Span Bridges Crossing Fault

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Abstract : Understanding seismic response feature of the bridges crossing fault is the basis of the seismic fortification. Taking a multi-span bridge crossing active fault under construction as an example, the seismic ground motions at bridge site were generated following hybrid simulation methodology. Multi-support excitations displacement input models and nonlinear time history analysis was used to calculate seismic response of structures, and the results were compared with bridge in the near-fault region. The results showed that the seismic response features of bridges crossing fault were different from the bridges in the near-fault region. The design according to the bridge in near-fault region would cause the calculation results with insecurity and non-reasonable if the effect of cross the fault was ignored. The design of seismic fortification should be based on seismic response feature, which could reduce the adverse effect caused by the structure damage.

Keywords : bridge engineering, seismic response feature, across faults, rupture directivity effect, fling step
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