

Real-Time Hybrid Simulation To Demonstrate Seismic Behavior Of Response-Controlled Multi-Stories Rc Frame Structure

Yoichi MUKAI, Shun-Nosuke FUJII, Baku TANAKA, Takashi FUJINAGA, Hideo FUJITANI

This study estimates a seismic performance of a two-stories RC frame building structure through the RTHS. The first story's column is prepared as the practical test specimen. A high-speed hydraulic actuator imposes its deformation. The seismic response of the target model is controlled by an active mass damper (AMD). The AMD is placed on the shaking-table to demonstrate the AMD-equipping floor motions. The AMD is assumed to locate on the top floor or the bottom floor. The validity of the RTHS test results is investigated by comparing the measured response in the test and the pure-simulation results. Consistency between the RTHS test and the pure analysis can be confirmed in both cases with and without control. However, a difference in reproduction preciseness was seen between controlling cases by the different locations of the AMD. Moreover, the control effects in different cases using the AMD located on the top floor/the bottom floor was also estimated through the RTHS test.