

Hybrid Diagrid System for High-Rise Buildings

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Abstract : Nowadays, using modern structural systems with specific capabilities, like Diagrid, is emerging around the world. In this paper, a new resisting system, a combination of both Diagrid axial behavior and proper seismic performance of regular moment frames in tall buildings, named 'Hybrid Diagrid' is presented. The scaled specimen of the suggested hybrid system was built and tested using IIEES shaking table. The natural frequency and structural response of the analytical model were updated with the real experimental results. In order to compare its performance with the traditional Diagrid and moment frame systems, time history analysis was carried out. Extensive analysis shows the efficient seismic responses and economical behavior of Hybrid Diagrid structure with respect to the other two systems.

Keywords : hybrid diagrid system, moment frame, shaking table, tall buildings, time history analysis

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