

Comparison of the Seismic Response of Planar Regular and Irregular Steel Frames

Authors : Robespierre Chavez, Eden Bojorquez, Alfredo Reyes-Salazar

Abstract : This study compares the seismic response of regular and vertically irregular steel frames determined by nonlinear time history analysis and by using several sets of earthquake records, which are divided in two categories: The first category having 20 stiff-soil ground motion records obtained from the NGA database, and the second category having 30 soft-soil ground motions recorded in the Lake Zone of Mexico City and exhibiting a dominant period (T_s) of two seconds. The steel frames in both format regular and irregular were designed according to the Mexico City Seismic Design Provisions (MCSDP). The effects of irregularity through the height on the maximum interstory drifts are estimated.

Keywords : irregular steel frames, maximum interstory drifts, seismic response, seismic records

Conference Title : ICMMASE 2016 : International Conference on Mathematical Methods and Applications in Science and Engineering

Conference Location : San Diego, United States

Conference Dates : January 21-22, 2016