

عنوان مقاله:

The Comparison of Seismic Retrofitting in Ordinary Steel Moment Resistant Frames with two CBF and ADAS Systems

محل انتشار:

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خلاصه مقاله:

In this study, the nonlinear seismic behavior of typical Iranian buildings is evaluated. Samples include simple steel building frames and ordinary moment resistant steel as well as concrete frames. The effectiveness of two retrofit schemes is compared:- Concentric steel braces (CBF)- Added Damping and Stiffness steel plate energy dissipaters (ADAS) In this investigation, mechanical characteristics of ADAS elements, studied using a nonlinear analysis program and for performance based evaluation of structures, nonlinear static pushover analysis conducted using ATC-40 capacity spectrum method. The results indicated that, although CBF retrofit scheme is efficient in stiffness increases and lateral displacement reduction, but increases the internal forces of some structural elements. Due to limit capacity of elements, this scheme doesn't satisfy the retrofit objectives. The ADAS dissipater, in contradiction of CBF system, doesn't produce significant increases structural seismic forces. Retrofitted structures with ADAS are able to sustain earthquakes, which are stronger than design earthquake.

کلمات کلیدی:

Added Damping and Stiffness elements , ADAS , Seismic retrofit , Energy dissipation , Chevron braces , Demand-capacity spectrum

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