عنوان فارسی مقاله:
مقاوم سازی لرزه‌ای قاب‌های خمشی خرپایی ویژه با استفاده از میراگرهای ویسکوز

عنوان انگلیسی مقاله:
Seismic retrofit of special truss moment frames using viscous dampers

توجه!
این فایل تنها قسمتی از ترجمه میباشد. برای تهیه مقاله ترجمه شده کامل با فرمت ورد (قابل ویرایش) همراه با نسخه انگلیسی مقاله، اینجا کلیک کنید.
5. Conclusions

In this study the seismic performance of STMF was investigated by fragility analyses and the results were compared with the performance of special moment resisting frames. Then seismic retrofit scheme was proposed by installing a viscous damper in the special segment. Pushover analysis results showed that STMF model structures generally have larger stiffness and strength than those of the SMRF structures designed with the same loading condition. However ductility was slightly reduced in comparison with the moment frames. It was also observed that, as assumed in the design phase, most plastic hinges formed at the chord members in the special segments, and that failure occurred when the plastic rotation in the special segments exceeded the limit state. Nonlinear dynamic analysis showed that the seismic retrofit of STMF structures using viscous dampers in the special segments resulted in reduction of the maximum inter-story drifts below the desired target point. The capacity-demand diagram method provided in the ASCE/SEI 41-10 turned out to be effective in estimating the required amount of additional viscous damping to meet a given target performance point. According to fragility analysis results, the probabilities of reaching a limit state of STMF were similar to those of the SMRF structures. The probability of reaching a limit state for a given earthquake intensity was higher in the 10 story structure than that of the 3 story structure. It was also observed that the seismic performance of STMF was marginally increased by installation of viscous dampers in the special segments in the slight to moderate damage states. The effect of the viscous dampers on enhancing seismic safety of STMF increased significantly in the complete damage state which is associated with large deformation in the special segments.