عنوان فارسی مقاله:
مطالعه بهینه سازی میراکر های ویسکوز بین ساختمان های مجاور

عنوان انگلیسی مقاله:
An optimization study for viscous dampers between adjacent buildings

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.
4. Conclusion

In this paper, the optimization procedure to obtain capacity and location of viscous dampers connecting adjacent buildings has been explained. Different vibration characteristics of neighboring buildings result in structural pounding which may lead to harmful damages. Variations of pounding force and supplemental damping ratio are represented based upon nondimensional scale of natural frequencies which is developed to be able to compare the cases including buildings with different structural characteristics. It is obtained that pounding force mainly rely on structural characteristics of buildings. In addition, it is concluded that supplemental damping ratio for prevention of pounding is not proportional with pounding forces.

In this paper, the existing design formula of structures with supplemental viscous dampers has been modified for two buildings connected by viscous dampers. The results show that optimum selection of damper properties reduces displacement responses effectively and prevents pounding.

The relation between upper bound of damper capacity, total damper capacity and the number of damper devices is achieved by the optimization algorithm for placement of damper devices. Ascending upper bound decreases both total capacity and number of dampers and vice versa.

This paper contributes to related literature in terms of effective and simplified solution to overcome structural pounding problem.