

## عنوان مقاله:

A Coaxial Cross Section Bridge Pier

## محل انتشار:

فصلنامه زلزله شناسی و مهندسی زلزله, دوره 15, شماره 3 (سال: 1392)

تعداد صفحات اصل مقاله: 12

## نویسندگان:

Amirabbas Koochekali - Islamic Azad University, Science and Research Branch

Abdoreza Moghadam - IIEES

Mohsen Ghafory-Ashtiany - IIEES

## خلاصه مقاله:

In this study, a new structural system for either retrofitting or design of new structures has been presented that provides more resistance for lateral loading conditions in comparison with the conventional systems. This new structural system can be utilized for a wide range of steel or concrete infrastructure systems from bridges to jackets as offshore structures. In this paper, structural performance of the new system is compared with conventional system for bridges. The structural response of piers in long- and medium-span bridges has been studied. A comparative study is carried out through static pushover analysis of four medium-span bridge piers and reveals the new system has a higher load-carrying capacity compared with the conventional system, whilst no significant changes are observed for period-based ductility. A probabilistic analysis of the structural collapse is carried out through incremental dynamic analysis (IDA). The results from IDA analyses show higher seismic safety for the new system compared to the conventional system. Besides, a time history analysis for far-field earthquake ground motions to evaluate structural response of a long span bridge was conducted. The results indicate that the stiffness degradation observed in the conventional system caused more damage than the stiffness degradation observed in the new system.

## کلمات کلیدی:

Far-field Ground Motion, Incremental Dynamic Analyses, New Structural System, Structural Collapse, Probabilistic Analysis, Reliability Index

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1303268>

