عنوان مقاله:

Numerical performance evaluation of seismically retrofitted bridge concrete column under extreme loading

محل انتشار:

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نویسندگان:

,GholamReza Havaei - *Assistant Professor, Amirkabir University of Technology, Tehran, Iran*

Pejman Namiranian - *Ph.D. of Civil Engineering, Iran University of Science and Technology, Tehran, Iran*

خلاصه مقاله:

Pier columns have the most important role for overall stability of bridges and these elements are the most vulnerable structural components under extreme loading. The main objective of current paper is investigating the performance of bridge piers' reinforced concrete columns which seismically retrofitted by steel or CFRP jacketing under extreme loading via finite element analysis. The finite element models' assumptions are verified using the correlated experimental data from the literature review and good agreements have been obtained. Parametric studies are conducted to cover a wide range of factors including longitudinal reinforcement ratios, the transverse reinforcement in plastic hinge region, extreme loading intensity parameters and the types of conventional retrofitting jacket (steel or CFRP). The results reveal that utilizing seismically retrofitting jacket, especially CFRP jacket, tend to be an effective way to reduce demands of reinforced concrete column under extreme loading, where its effectiveness increases, in case of more severe events

کلمات کلیدی:

steel jacketing, CFRP jacketing, extreme loading, finite element analysis