عنوان مقاله:

The Application of Artificial Neural Networks in Predicting Seismic response of RC Frames with masonry infills

محل انتشار:

ششمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1390)

تعداد صفحات اصل مقاله: 8

نویسندگان:

I Kameli - *M.sc, Dept. of Civil Engineering, University of Sistan and Baluchestan, Zahedan, Iran,*

m Miri - *Assistant professor, Dept. of Civil Engineering, University of Sistan and Baluchestan, Zahedan, Iran,*

a Raji - *M.Sc in Structural Engineering*

f Bahrami - *M.sc, Dept. of Mechanical Engineering, University of Sistan and Baluchestan, Zahedan, Iran*

خلاصه مقاله:

The objective of this study is the application of artificial neural networks (ANN) in estimating seismic behavior of reinforced concrete (RC) frames with masonry infills. In the present research existing RC frames are modeled by changing number of bays, number of stories, infill thickness, existence of soft storey and infilled wall ratio (opening percentage). The capacity curve of all modeled frames is obtained using pushover analysis. Afterwards, base shear and roof displacement (ANN outputs) in target displacement (performance point) are calculated for three design spectral accelerations (moderate, high, very high seismic hazard region). Finally 855 data set are prepared, and a three-layer feed-forward neural network with 11 back propagation algorithms is trained in different structures and the best structure is obtained for each network using trial and error. The results indicate that the Levenberg-Marquart back propagation algorithm has the highest accuracy compared to other algorithms

کلمات کلیدی:

Reinforced Concrete Frame, Masonry Infill, Artificial Neural Network, TargetDisplacement

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/115067