عنوان مقاله:

Determination of Lateral load Capacity of Steel Shear Walls Based on Artificial Neural Network Models

محل انتشار:

دوفصلنامه مهندسی سازه و ژئوتکنیک, دوره 10, شماره 1 (سال: 1399)

تعداد صفحات اصل مقاله: 9

نویسندگان:

Meisam Bayat - *M.Sc. Structural Eng. , Department of civil engineering, Qazvin Branch, Islamic Azad University, Qazvin, Iran*

Ali Delnavaz - *Department of civil and surveying engineering, Qazvin Branch, Islamic Azad University, Qazvin, Iran*

خلاصه مقاله:

In this paper, load-carrying capacity in steel shear wall (SSW) was estimated using artificial neural networks (ANNs). The SSW parameters including load-carrying capacity (as ANN's target), plate thickness, thickness of stiffener, diagonal stiffener distance, horizontal stiffener distance and gravity load (as ANN's inputs) are used in this paper to train the ANNs. ۱۴۴ samples data of each of this parameters was calculated using SSW simulation in abaqus. Load-carrying capacity of SSW was estimated using radial basic function (RBF) and multi-layer perceptron (MLP) neural networks. Spread parameter in RBF and number of hidden layer, number of neurons in this layers and activation function in MLP optimized using a trial and error method. The results showed that the load-carrying capacity of SSW could estimate using RBF and ANN by ۸۴ and ۹۶ percent of precision respectively.

کلمات کلیدی:

Load-carrying capacity of SSW, RBF neural network, MLP neural networks