

عنوان مقاله:

Predicting the buckling Capacity of Steel Cylindrical Shells with Rectangular Stringers under Axial Loading by using Artificial Neural Networks

محل انتشار:

ماهنامه بین المللی مهندسی، دوره 28، شماره 8 (سال: 1394)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

A parametric study was carried out in order to investigate the buckling capacity of the vertically stiffened cylindrical shells. To this end, ANSYS software was used. Cylindrical steel shells with different yield stresses, diameter-to-thickness ratios (D/t) and number of stiffeners were modeled and their buckling capacities calculated by displacement control nonlinear static analysis. Radial basis function (RBF) neural networks were used to predict the buckling capacity of shells. Herein, 70 percent of the results of numerical analyses were used to train the neural network and the remainders to test and validate the results. Results of this study showed that RBF neural networks are useful tools to predict the buckling capacity of vertically stiffened cylindrical shells. It was also shown that buckling capacities of (stiffened shells exponentially vary by distance of adjacent stiffeners (unstiffened length

کلمات کلیدی:

, Buckling , Cylindrical Shells , Stiffener , Artificial Neural Networks

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<https://civilica.com/doc/406398>

