The Application of the Approximate-Perturbed Method in Double Domes Free Form Space Structures

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چکیده :

One traditional method for the distribution of imperfection is the approximate-perturbed method. In this paper, the application of the approximate-perturbed method in free form double domes is investigated. Nonlinear analysis of free form double domes are carried out using finite element method. Having verified the finite element modeling, collapse analysis have been undertaken in order to examine the behaviour of these structures. The results show that the lowest buckling modes could not be considered as the effective modes to obtain the true equilibrium path. Also the buckling modes could be categorized in two groups: sensitive modes and non-sensitive modes. Using the approximate-perturbed method needs much more calculation time to find out the sensitive mode used for the initial imperfection shape in free form double domes. So, one step method has been suggested in order to eliminate 60 .percent of buckling modes before applying the approximate-perturbed method

کلید واژه : Free Form, Approximate-Perturbed Method, Eigen-Buckling Analysis, Double Domes