عنوان مقاله:

Performance Level and Push Over Curve's Parameters in Double-Layer Space Structures

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خلاصه مقاله:

Seismic behavior of space structures regarding their sensitivity is of paramount importance, which, due to its complexity and lack of a valid regulation in this case, is very time consuming. Thus studies in this field are on the basis of engineering decisions. Therefore, in the present study it is attempted to consider the seismic behavior and behavior coefficient of the structures profoundly. In this study three different types of flat double-layer grids with a variable rise-to-span ratio was chosen and all of the models were analyzed for gravity loads and were designed and optimized for the load combination. Then, the linear analysis under a special load combination proceeded by the onset of a non-linear static analysis (pushover) regarding the post-buckling behavior of tension members. Later, the target displacement of each of the structures is calculated through capacity spectrum method and by using this displacement, all of the mentioned analysis are re-performed to reach the final displacement-force curve of the structure. Behavior of different structures has been compared and the extent to which the behavior of structure is subordinate of the method and order of plastic hinge formation in that structure has been showed. The obtained conclusions indicate that the performance level has a significant effect on seismic behavior and the parameters of pushover curve. Behavior coefficient is the mean of ۱۲ models' behavior factor and a chart is represented to calculate target displacement.

کلمات کلیدی:

space structures, seismic behavior, behavior coefficient, push over, period time

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