

عنوان مقاله:

RELIABILITY BASED TOPOLOGY OPTIMIZATION FOR THE SEISMIC DESIGN OF TRUSS-LIKE STRUCTURES

محل انتشار:

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خلاصه مقاله:

In this paper, reliability based design methodology is applied towards optimization of truss structures excited by earthquake ground motions. The total weight of structure is optimized under constraints related to minimum target reliabilities specified for each element and different performance requirements. To achieve this goal, the redundant materials slightly move from strong spots to the weak segments of the structure until a state of uniform deformation and confidence prevails. Probabilistic seismic performance assessment adopted by PEER is applied to calculate the expected mean annual exceedance frequency of demand parameter of a given truss system considering seven seismic excitations. The efficiency of the applied method is illustrated by case study. The algorithm has the capability of considering desired reliability constraints for each element resulting in a balanced distribution of weight

کلمات کلیدی:

Topology Optimization, Seismic Design, Truss-Like Structures

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