

عنوان مقاله:

A TWO-STAGE SIMP-ACO METHOD FOR RELIABILITY-BASED TOPOLOGY OPTIMIZATION OF DOUBLE LAYER GRIDS

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خلاصه مقاله:

For reliability-based topology optimization (RBTO) of double layer grids, a two-stage optimization method is presented by applying "Solid Isotropic Material with Penalization" and "Ant Colony Optimization" (SIMP-ACO method). To achieve this aim, first, the structural stiffness is maximized using SIMP. Then, the characteristics of the obtained topology are used to enhance ACO through six modifications. As numerical examples, reliability-based topology designs of typical double layer grids are obtained by ACO and SIMP-ACO methods. Their numerical results reveal the effectiveness of the proposed SIMPACO method for the RBTO of double layer grids.

کلمات کلیدی:

Double layer grids; reliability-based topology optimization; solid isotropic material with penalization; ant colony optimization; two-stage optimization method

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