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OPTIMIZATION OF PRISMATIC BEAM'S DIMENSIONS UNDER CONSTRAINTS WITH NUMERICAL AND ALGORITHM GENETICS METHODS

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Abstract

This paper presents a brief study of the information from the beam systems analysis with respect to optimization. The main goal of this work is to motivate and give an idea to designers who are willing to deal with optimization of beam systems. The results obtained and presented in this study are to provide a comparison with numerical optimum design method, and to show the potential of genetic algorithms in optimization of beam systems in the form of simple example of beam system. Two softwares are used for optimization, MATLAB for Algorithm Genetic and ANSYS for numerical method. Genetic algorithms have been used as optimization problem solving techniques. They are parameter search procedures based on the idea of natural selection and genetics. These robust methods have increasingly recognized and applied in many applications.

Keywords and phrases: optimization, genetic algorithms, MATLAB, ANSYS, beam.
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