Engineering Optimization of Flexible Energy Absorbers

Authors : Reza Hedayati, Meysam Jahanbakhshi

Abstract : Elastic energy absorbers which consist of a ring-liked plate and springs can be a good choice for increasing the impact duration during an accident. In the current project, an energy absorber system is optimized using four optimizing methods Kuhn-Tucker, Sequential Linear Programming (SLP), Concurrent Subspace Design (CSD), and Pshenichny-Lim-Belegundu-Arora (PLBA). Time solution, convergence, Programming Length and accuracy of the results were considered to find the best solution algorithm. Results showed the superiority of PLBA over the other algorithms.

Keywords : Concurrent Subspace Design (CSD), Kuhn-Tucker, Pshenichny-Lim-Belegundu-Arora (PLBA), Sequential Linear Programming (SLP)

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