

Engineering Optimization Using Two-Stage Differential Evolution

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Abstract : This paper employs a heuristic algorithm to solve engineering problems including truss structure optimization and optimal chiller loading (OCL) problems. Two different type algorithms, real-valued differential evolution (DE) and modified binary differential evolution (MBDE), are successfully integrated and then can obtain better performance in solving engineering problems. In order to demonstrate the performance of the proposed algorithm, this study adopts each one testing case of truss structure optimization and OCL problems to compare the results of other heuristic optimization methods. The result indicates that the proposed algorithm can obtain similar or better solution in comparing with previous studies.

Keywords : differential evolution, Truss structure optimization, optimal chiller loading, modified binary differential evolution

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