

COST MINIMIZATION OF WELDED BEAM DESIGN PROBLEM USING PSO, SA, PS, GODLIKE, CUCKOO, FF, FP, ALO, GSA and MVO

¹CHRISTU NESAM DAVID. D, ²S. ELIZABETH AMUDHINI STEPHEN & ³AJAY JOE, A

¹Scholar, Karunya University

²Associate Professor, Department of Mathematics Karunya University, Coimbatore

³Scholar, Karunya University

ABSTRACT

The objective functions used in Engineering Optimization are complex in nature with many variables and constraints. Conventional optimization tools sometimes fail to give global optima point. Very popular methods like Genetic Algorithm, Pattern Search, Simulated Annealing, and Gradient Search are useful methods to find global optima related to engineering problems. This paper attempts to use new non-traditional optimization algorithms which are used to find the minimum cost of designing welded beam to obtain global optimum solutions. The cost, number of iterations and the total elapsed time to complete the problems are all compared using these ten non-traditional optimization methods.

KEYWORDS: Welded Beam Design, Pattern Search, Simulate Annealing, Pattern Search, GODLIKE, Cuckoo Search, Firefly Algorithm, Flower Pollination, Ant Lion Optimizer, Gravitational Search Algorithm, Multi-Verse Optimizer