A NEW SOLUTION FOR IMPROVING PERFORMANCE OF ANT COLONY OPTIMIZATION

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ABSTRACT

At this time ant colony optimization (ACO) is often used in optimization methods. ACO algorithm has been applied in various applications optimization such as genetic algorithms, Travel salesman problem, simulated annealing, vehicle scheduling and others. However, there are several deficiency in ACO method. Therefore in this thesis proposed a new method which is the development of methods of Ant Colony Optimization ACO Searching Reduce Space (ACORSES). That the proposed algorithm is based on each ant who seek the best solution using the iteration beta (β). Beta (β) is used to improve the performance of ACO solutions for achieving the global optimum quickly. ACORSES is tested on five mathematical test functions taken from literature. ACORSES performance will be compared with ACO method. Results show ACORSES antecedent performance better than other optimization algorithms, with the value of object function and the number of iterations which approach global minimum.

Key words: Ant colony optimization, Reduced search space, Function minimization.