Discretization of Cuckoo Optimization Algorithm for Solving Quadratic Assignment Problems

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Abstract : Quadratic Assignment Problem (QAP) is one the combinatorial optimization problems about which research has been done in many companies for allocating some facilities to some locations. The issue of particular importance in this process is the costs of this allocation and the attempt in this problem is to minimize this group of costs. Since the QAP's are from NP-hard problem, they cannot be solved by exact solution methods. Cuckoo Optimization Algorithm is a Meta-heuristicmethod which has higher capability to find the global optimal points. It is an algorithm which is basically raised to search a continuous space. The Quadratic Assignment Problem is the issue which can be solved in the discrete space, thus the standard arithmetic operators of Cuckoo Optimization Algorithm need to be redefined on the discrete space in order to apply the Cuckoo Optimization Algorithm on the discrete searching space. This paper represents the way of discretizing the Cuckoo optimization algorithm for solving the quadratic assignment problem.