Symbiotic Organism Search (SOS) for Solving the Capacitated Vehicle Routing Problem

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Abstract : This paper introduces symbiotic organism search (SOS) for solving capacitated vehicle routing problem (CVRP). SOS is a new approach in metaheuristics fields and never been used to solve discrete problems. A sophisticated decoding method to deal with a discrete problem setting in CVRP is applied using the basic symbiotic organism search (SOS) framework. The performance of the algorithm was evaluated on a set of benchmark instances and compared results with best known solution. The computational results show that the proposed algorithm can produce good solution as a preliminary testing. These results indicated that the proposed SOS can be applied as an alternative to solve the capacitated vehicle routing problem.