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An Algorithm of Set-Based Particle Swarm Optimization with Status Memory for Traveling Salesman Problem

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Abstract : Particle swarm optimization (PSO) is an optimization approach that achieves the social model of bird flocking and fish schooling. PSO works in continuous space and can solve continuous optimization problem with high quality. Set-based particle swarm optimization (SPSO) functions in discrete space by using a set. SPSO can solve combinatorial optimization problem with high quality and is successful to apply to the large-scale problem. In this paper, we present an algorithm of SPSO with status memory to decide the position based on the previous position for solving traveling salesman problem (TSP). In order to show the effectiveness of our approach. We examine SPSOSM for TSP compared to the existing algorithms.

Keywords : combinatorial optimization problems, particle swarm optimization, set-based particle swarm optimization, traveling salesman problem
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