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""4.1. Ms1: Pick a Global Guidance Located in the Least Crowded Areas """"A2. Algorithm for Ms1 ""; ""4.2. Ms2: Create the Perturbation with Differential Evolution Concept ""; ""A3. Algorithm for Ms2 ""; ""4.3. Ms3: Search the Unexplored Space in the Non-Dominated Front ""; ""A4. Algorithm for Ms3 ""; ""4.4. Ms4: Combination of Ms1 and Ms2 ""; ""4.5. Ms5: Explore Solution Space with Mixed Particles ""; ""4.6. Ms6: Adaptive Weight Approach ""; ""5. Design of Experiments ""; ""6. Results and Discussions ""; ""7. Conclusions ""; ""Acknowledgment ""; ""References ""
""PARTICLE SWARM OPTIMIZATION APPLIED TO REAL-WORLD COMBINATORIAL PROBLEMS: THE CASE STUDY OF THE IN-CORE FUEL MANAGEMENT OPTIMIZATION """"Abstract ""; ""1. Introduction ""; ""2. Particle Swarm Optimization ""; ""3. Models of Particle Swarm Optimization for Combinatorial Problems ""; ""4. Particle Swarm Optimization with Random Keys ""; ""4.1. Random Keys ""; ""4.2. Particle Swarm Optimization with Random Keys ""; ""5. Optimization of Real-World Problems: The Case Study of the in-Core Fuel Management Optimization ""; ""5.1. The Traveling Salesman Problem ""
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Sommario/riassunto

Swarm Intelligence (SI) describes the evolving collective intelligence of population/groups of autonomous agents with a low level of intelligence. The population of agents interacts with each other or their environment locally using decentralised and self-organisational aspects in their decision making. SI and related sub-methods that follow its principles are used for problem solving in a variety of areas, such as robotics and forecasting. This book discusses swarm intelligence techniques and fuzzy logic as useful tools for solving practical engineering problems and the utilisation of a swarm intelligence algorithm to obtain the optimum neural network structure. Also explored is the application of Particle Swarm Optimization (PSO) methods to inverse heat radiation problems and PSO as a technique in computational electromagnetism problems.