Employee Shuttle Bus Management using Adaptive Differential Evolution: A Case Study Electronic Factory

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Abstract. The employee shuttle bus service can derive employee satisfaction and work on time. This problem aims to minimize the transportation cost and to minimize the number of vehicles and travel time. To solve the problem, a new adaptive differential evolution (ADE) with mixed search strategies of intensify and diversify was proposed. The adaptive methods of mutation and recombination processes was applied for cyclic generation function. Based on a case study, the proposed ADE was tested. The results shown that the proposed ADE is simple but effective, compare with original DEs with mutation DE/rand/1 and DE/best/1. Comparison with traditional way, it can reduce the total cost of 4.93%.

Keywords: Shuttle Bus Management, Vehicle Routing Problem, Adaptive Differential Evolution