

# 調適型導引螞蟻演算法求解時窗收卸貨問題之研究

李泰琳, 張靖

運輸科技與物流管理學系

管理學院

ching@chu.edu.tw

## 摘要

The Pick Up and Delivery Problem with Time Windows (PDPTW) was solved by the proposed Guided Adaptive Ant Colony System (GAACS) which was integrated by the Guided Local Search (GLS) and Adaptive Ant Colony System (AACS). However, in order to solve the PDPTW more efficiently and effectively, a PDPTW was transferred to be a new similar PDP (SPDP) without time window by the Time Window Partitioning and Discretization Strategy. In order to show the contribution of the GAACS, there are 18 Solomon benchmark VRP problems transferred to be PDPTW problems by the method developed by the Lau and Liang. According to the computation results, we obtained the average percentages of errors of the best published solutions among 18 PDPTW test instances is 1.80% and average computation time is 25.9 minutes. This shows that our proposed GAACS method can solve PDPTW accurately in a reasonable time.

**關鍵字：**Ant colony optimization; Guided local search; Pickup and delivery problem with time windows