禁忌搜尋法應用於車輛路線問題之研究

陳勝男、林燦煌

E-mail: 8515667@mail.dyu.edu.tw

摘 要

配送活動在物流行業中扮演著一個重要的角色，同時如何將配送作業 電腦化在商業自動化中為相當重要的一環，然而配送作業的重點在於如何 有效的使用車輛以及決定其最經濟的行駛路線。由於目前能源日漸短缺， 因此如何降低車輛行駛所耗費的能源日益重要；同時，路線愈經濟則愈可 節省車輛路線所造成的營運成本。 本研究針對台灣馬路普遍狹小的特 徵，探討需求點可接受的車種有噸位大小限制之車輛路線問題，本研究使 用兩階段法進行求解，第一階段利用空間填滿曲線產生一個起始解，第二 階段以禁忌搜尋法為主幹，結合插入法及路線間節點交換法作為改善法。 以本研究的方法求解文獻上的10個單車種問題，可得到4個現有的最 佳解；但是需求需求點增多時（大於100個需求點），解的品質會下降。 同時，我們產生三個雙車種且需求點可接受之車輛有噸位大小限制之例題 進行測試，其中有兩個解的品質和我們預估的相同，而需求點最多的那個 例題（需求點個數94）的路線距離比上限值還小。最後我們探討各車種之 車輛數變化時對路線總距離的影響，結果發現使用越多容量較小的車輛時 ，路線距離會增加。

關鍵詞 : 車輛路線問題 ; 禁忌搜尋法 ; 空間填滿曲線

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