隨機型車輛途程問題解決之研究

黃金智、吳泰熙

E-mail: 9900284@mail.dyu.edu.tw

摘 要

車輛途程問題(Vehicle Routing Problem，VRP)在國內外一直有許多相關文獻在探討，而且它是屬於NP-Hard問題，因此無法在一合理的時間內求得最佳解，故一般皆以啟發式演算法來求得一近似解。然而在考慮實際應用方面，這些演算法只能應用在顧客需求量及顧客有無被服務已知的確定型行業中，對於一些顧客需求量不確定（隨機型）的行業中，如快遞業，這些研究就不適用。除此之外，國內對於隨機型車輛途程問題(Stochastic VRP，SVRP)方面的研究相當少，因此為了更符合實際的情況，本研究考慮顧客需求量不確定的情況，而且不同以往研究假設單一車種且車輛數無限，提出一車輛數有限之多車種隨機車輛途程問題。 本研究以禁忌搜尋法作為求解之工具，在隨機VRP方面以機會限制式的技巧求解SVRP。研究結果發現在確定型VRP中，節點數大於50途程間迭代次數與總迭代次數對解有影響,禁忌名單大小對目標值影響不大。在多車種車輛數無限與有限的VRP中，禁忌名單大小與迭代次數對目標值影響不大。在隨機單一車種方面，途程失敗機率?愈大目標值愈好，填滿係數f值愈小目標值愈好。在隨機多車種方面VRP方面車種數愈大目標值有下降趨勢。

關鍵詞 : 車輛途程問題 ; 隨機型車輛途程問題 ; 多車種 ; 禁忌搜尋法

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