# 粒子群集法於圓形物件排列的應用


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**摘 要**

粒子群最佳化演算法（Particle Swarm Optimization, PSO）是由 Eberhart 和Kennedy 兩位博士所提出的演算法。 PSO 源起對於鳥群捕 食行為的觀察過程，由簡單的個體組合而成的群體以及個體之間的互動 行為，透過科學模擬系統從局部信息來產生不可預測的群體行為，藉以 有效達到覓食的目標，同時來簡化說明社會生命現象，避免採取隱喻機 制的演算法來解決問題。 本論文利用PSO 演算法，以族群為基礎於設計空間中，進行搜尋運 算的特性排列物件，探討PSO 更新機制對於排列的影響。在結果中得知 ，速度慣性權重（inertia weighted）對於粒子移動的穩定性有關，加 速度常數（ acceleration constant）的大小影響收斂速度的快慢。對 於排列的結果，速度慣性權重與加速度常數影響較不明顯，影響較明顯 的則是初始產生的位置範圍。



關鍵詞 : 粒子群集法 ; 圓形物件排列 ; 演算法 ; 穩定性 ; 群集法 ; 權重 ; 範圍


**目錄**



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