對 Tsallis 隨機變數的隨機產生器之探討及應用

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摘 要

Tsallis之分佈由C. Tsallis 於1996年提出來解決退火模擬之問題。此演算法被證明為比一般的退火模擬法；能夠更快的達到全域的最佳解。但是該函數非常之複雜，無法用一般之隨機變數的產生方法來產生。Tsallis根據R. N. Mantegna(1994)產生Levy之分佈的演算法，進而導出一個Tsallis隨機變數產生法。但是此方法有著許多問題：當參數 為1.2至1.4時，隨機變數有可能是虛數。並且當我們用蒙地卡羅(Monte Carlo)模擬法來模擬可能的隨機變數值時，我們發現其直方圖(histogram)與理論的機率密度函數並沒有完全符合。因此藉由Tsallis所提出之Tsallis隨機變數產生器並不能完全正確的代表理論之分佈，我們提出一個較佳的產生器更能代表Tsallis隨機變數。

關鍵詞 : Tsallis之分佈 ; 退火模擬法 ; 蒙地卡羅模擬法 ; 隨機變數產生器

目錄

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