擴展式卡門濾波器應用於無線感測網路解決基地台之安全機制研究

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摘 要

本論文中，基於無線電信號之可追蹤場型分佈，以最佳化之通道容量負擔條件，透過擴展式卡門濾波器(Extended Kalman filter, E-KF) 之檢測，平滑與預測之原理，提出一則新的基地台 (base station) 搜尋以及管理策略，使得蜂巢式網路（cellular network）的基地台管理與應用分配可以更為彈性化與人性化。再者，為了表現本研究新成果，考量在所需的服務品質（QoS, quality of service）之臨界條件下，以系統吞吐量（through-put）之方法呈現其成果；經過系統所提出與推導所的結果，吾以模擬與數值分析討論，亦證實本文之理論的正確性與可靠度。此外，將通訊通道之衰落現象亦考慮的情況下，發現系統整體的效益是受到壓縮而有衰化現象。最後，吾認定本文此一研究所提出之系統，值得無線通訊系統業者，在架構其服務基地台時，為防止變動物件攻擊時，值得參考。最後並且以演算流程進行模擬，值得注意的是，當Kalman gain提高時，其模擬追蹤之基站的正確性越高。

關鍵詞 : 基地台；蜂巢式網路；擴展卡門濾波器；服務品質；系統吞吐量

目錄

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