應用動態適應偵測器於雷達目標追蹤系統之研究

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摘 要

中文摘要 本論文提出一種「應用動態適應性偵測器」來做多重變速移動式目標追蹤，處理多偵測器之間的資料融合技術與估測方法，以結合不同位置的動態偵測器資料，改善追蹤上的問題，進而產生一個總體的估測值。 用單一個偵測器來做雷達目標的追蹤偵測時，會因掃描區域太大，造成偵測上的疏失、甚至失去追蹤的目標。同時追蹤多個目標時情況更加複雜，這時若使用「動態偵測器」來偵測目標的相關數據，可使追蹤目標的誤差變小，增加追蹤的成功率。 為解決由於多變速度移動目標追蹤環境所引起的複雜情況及減少計算負荷，本論文發展一種簡單的演算方法。此演算式運用一個適應性的濾波器與資料融合技術，利用一階條件最大近似法與可變結構模式適應性移動補償方法，來解決資料融合與目標移動時發生的問題。本論文亦同時提出應用競爭型類神經網路技術於多目標追蹤系統，以提升追蹤效能。 為了要提升追蹤的效率，本論文提出多重動態偵測器融合演算法，這種方法比傳統的演算可以減少運算，我們以多個追蹤方程式來做比對，驗證此追蹤系統的效率確有提升，電腦模擬結果顯示，此法可以成功而精確地追蹤多重目標。 關鍵詞：動態偵測系統、多目標追蹤、適應性濾波器、追蹤掃瞄區域預測、一階條件最大近似、競爭型類神經網路、多重偵測融合。

關鍵詞 : 關鍵詞：動態偵測系統、多目標追蹤、適應性濾波器、追蹤掃瞄區域預測、一階條件最大近似、競爭型類神經網路、多重偵測融合。

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