雷達多目標追蹤之遑應結構研究=an adaptive algorithm for radar multiple target tracking systems

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摘 要

在雷達多目標追蹤系統中，如何能有效地掌握目標的運動狀態將是一大重要的課題。而其中又以資料相關結合技術(Data Association Technology)、變加速度(Maneuvering)之偵測與修正系統參數的數學運算程序為決定追蹤效果與精確度之最主要的關鍵。在多目標追蹤環境中，常常因為複雜的外在環境以及雜訊的干擾，使得雷達系統所得之訊號中，除了正確的目標軌跡外，常常會有其它的量測訊號出現，造成錯誤的資料相關結合，進而引起追蹤上的誤差，甚至導致追蹤失敗。另外由於目標常有變速或是改變方向的現象，造成追蹤系統在運算上的誤差，所以，若不加以修正系統參數，將會影響追蹤系統的追蹤能力和精確度。本論文將提出以 ” 1-Step Conditional Maximum Likelihood ” 的資料相關結合技術，結合擴展式卡門濾波器(Extended Kalman Filter)與適應程序的技術，針對變速度運動目標，做一適應結構的研究。

關鍵詞 : 雷達追蹤系統 ; 資料相關結合技術 ; 適應程序

目錄

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