

利用適應性多模預估器作目標變速度追蹤

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摘要

在一個雷達追蹤系統中，如何有效的掌握目標運動狀態是非常重要的，其中以變速度(Maneuvering)檢測以及資料結合(Data Association)技術為影響目標追蹤之誤差以及準確率的重要關鍵。本文提出適應性多模預估器來做一個多目標的變速度追蹤，經由實驗結果顯示，加入適應性多模預估器之系統，能順利完成多個目標追蹤，且有效的降低追蹤目標的誤差率。

關鍵字: 變速度檢測; 資料結合; 適應性多模預估器

Applying Adaptive Multiple Model Estimator to Maneuvering Target Tracking

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Abstract

Target maneuvering situations are usually existed in radar tracking systems. It may occur severe tracking error even diverge the estimates when the maneuvering situations happened. The difficulty of tracking maneuvering targets in a radar system is hard to detect and to estimate the status of target accelerations efficiently. An efficient estimator for tracking multiple maneuvering targets has been developed in this paper. In this approach, an equivalent filter bank structure is designed to solve the uncertainty problems caused by target maneuvering situations. Moreover, an adaptive procedure is applied in this system to obtain more quickly response track filters. According to the simulation results, we convince that this approach can track multiple maneuvering targets effectively.

Key words: Target maneuvering situation; An efficient estimator;
Adaptive procedure