A Novel Robust Interacting multiple model Filter for maneuvering target tracking

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April 14, 2024

Abstract

A robust interacting multiple model approach is proposed to address the problem of accuracy and non-Gaussian measurement noise in maneuvering target tracking. Firstly, the interacting multiple model effectively improves the accuracy of maneuvering target tracking. Secondly, the multiple fading factors are introduced into the prediction covariance matrix for adjusting the gain matrix in real-time to enhance the accuracy caused by model mismatch and improve the ability of state transitions. Finally, the maximum correntropy criterion effectively promotes the robustness to outliers. The effectiveness of the proposed approach has been verified through simulation.

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