

Applying Dual-Kalman Filtering Algorithm to Radar Estimation Systems

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Abstract

Target Maneuvering situations are usually occurred in radar target tracking systems. Tracking maneuvering targets in a radar system is complicated because it can not directly measure target accelerations. Among target tracking algorithms, Kalman filtering approaches are the usually applied techniques, and the standard assumptions are Gaussian process and Gaussian noises. In this paper, we explore a Dual-Kalman filtering algorithm to handle the maneuvering targets' tracking problems. Based on this approach, the maneuvering situation can be detected and estimated effectively. According to the simulation results, this approach can improve the tracking accuracy. Such achievement will offer a lot of contributions for the navigation systems.

Key words: Maneuvering estimation; Gaussian process;
Dual-Kalman filtering algorithm