An Approach Using Adaptive Sampling Interval For a Multi-Target Tracking System

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ABSTRACT

This research is to design an algorithm using adaptive sampling interval for a radar tracking system. Via this technique, the tracking system can scan and grasp the target information more effectively. The key development of this approach is that the detection criterion for target maneuvering situation and environment status together with the extended Kalman filter and adaptive procedure algorithm is designed for a tracking system. In order to analyze this approach, a computer simulation algorithm is developed also. Finally, the comparision of the difference of general fixed sampling interval and adaptive sampling interval for a tracking system will be conducted in this thesis. In addition to the situations concerned as above, the multiple target tracking problems are also considered in this reasearch. According to the simulation results, the adaptive sampling interval procedure proposed in this thesis will enhance the radar tracking capability and have more accurate performance.

Keywords : Adaptive Sampling Interval Procedure ; Beamwidth Effect ; Target Maneuvering.

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