Applying Ant Colony Optimization to Data Association

邱永益、鍾翼能 ; 胡永柟

E-mail: 9706080@mail.dyu.edu.tw

ABSTRACT

Targets tracking is an extremely important task in the radar system. By tracking technique, we can know the information such as the location and the dynamic of targets. To get the complete targets by analyzing the signal that obtained by detection module, and seek the corresponding relationship between them in a continuous dynamic in order to achieve the purpose of tracking. The key developments of this subject are data association techniques and maneuvering targets ’ estimation algorithm.

In this thesis, a systematic tracking mode is developed by using an adaptive filter consisting of a data association technique denoted Ant Colony Optimization together with Kalman filters as an adaptive maneuvering compensator. With this approach, the accuracy of tracking performance can be effectively improved.

Keywords : Data association、Ant Colony Optimization

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