عنوان مقاله:

An Intelligent Algorithm for the Process Section of Radar Surveillance Systems

محل انتشار:

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خلاصه مقاله:

In this paper, an intelligent algorithm for clustering, intra-pulse modulation detection and separation and identification of overlapping radar pulse train is presented. In most cases, based only on primary features of incoming radar signals, the modern electronic intelligence system cannot recognize the different devices of the same type or class. A very important role is played by Measurement and Signature Intelligence. A radar intercept receiver passively collects incoming pulse samples from a number of unknown emitters. The information such as Pulse Repetition Interval (PRI), Angle of Arrival (AoA), Pulse Width (PW), Radio Frequencies (RF), and Doppler shifts are not usable. In the proposed algorithm, for clustering of overlapping pulses received from self-organization neural network SOFM (due to its high accuracy in comparison with other neural networks, such as CLNN and neural networks (Fuzzy ART), and for detecting intra-pulse modulation type, matrix method, and for identifying the radar type, RBF neural network have been used. The simulation results of the proposed algorithm shows that in the presence 5% noise and 5% missing pulse, the accuracy of the clustering part of the proposed algorithm is equivalent to 91/8%, intra-pulse modulation recognition accuracy is 98%, the detection accuracy is 2/99%, and the total output of the algorithm precision is .89/244%, respectively

کلمات کلیدی:

Pulse Train; Matrix Multiplication Method; Radar Identification; Neural Networks