Automatic target classification in gmti airborne scenario

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Abstrak

Ground moving radar target classification is one of the recent research issues that has arisen in an airborne ground moving target indicator (GMTI) scenario. This work presents a novel technique for classifying individual targets depending on their radar cross section (RCS) values. The RCS feature is evaluated using the Chebyshev polynomial. The radar captured target usually provides an imbalanced solution for classes that have lower numbers of pixels and that have similar characteristics. In this classification technique, the Chebyshev polynomial's features have overcome the problem of confusion between target classes with similar characteristics. The Chebyshev polynomial highlights the RCS feature and is able to suppress the jammer signal. Classification has been performed by using the probability neural network (PNN) model. Finally, the classifier with the Chebyshev polynomial feature has been tested with an unknown RCS value. The proposed classification method can be used for classifying targets in a GMTI system under the warfield condition.