A feature extraction method for automatic identification of flying targets from radar data

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Abstract— **Flying target identification is an important and challenging problem in airborne surveillance systems. In this report, we propose a method to automatically identify the flying targets by physical information (coordinates, heading, speed), time, and identification information (3/A code). This method includes two steps: features extraction and building a machine learning model. In the features extraction step, features that are extracted include cell indexes corresponding to coordinates, information of flight path, time in day/night format, heading, speed, and 3/A code, constructing n-dimensional vector. This vector is used as input for training a Random Forest model, to automatically identify class labels of flying targets.**

Keywords— **Machine learning, flying object identification, features extraction, random forest**

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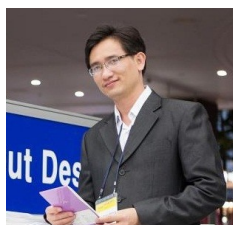
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