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AN INTEGRATED SYSTEM OF THE REMOTELY SENSED HYPERSPECTRAL IMAGER AND FORWARD LOOKING INFRARED SENSOR

Abstract

The hyperspectral imager and the forward looking infrared (FLIR) sensor are two kinds of valuable remote sensors in the surveillance and reconnaissance application: the former one can obtain spectral and spatial information of the objects on the ground, simultaneously, so that the precise identification of the objects can be achieved, and the latter one can obtain the radiation information of the objects and has the capability to detect the objects which have the radiation difference from the environment. Therefore, both hyperspectral imager and FLIR sensor are extremely useful in object recognition, camouflage detection, etc. In this paper, the potential and advantage of the integrated system of the hyperspectral imager and the FLIR sensor is explored. An integrated system is designed, the components of the system are introduced and the approach of the data fusion is investigated as well. The experiments are carried out in which the designed integrated system is planted on a crane to acquire the ground data. In the experiments, the average classification accuracy of objects on the ground is 86.33