

Hyperspectral cameras can provide unique spectral signatures for consistently distinguishing materials that can be used to solve surveillance tasks. In this paper, we propose a novel hyperspectral likelihood maps-aided tracking method (HLT) inspired by an adaptive hyperspectral sensor. A moving object tracking system is generally made of registration, object detection, and tracking. We focus on the target detection part and remove the necessity to build any offline classifiers, instead learning a generative target model in an online manner for hyperspectral channels ranging from visible to infrared wavelength. The key idea is that, our adaptive fusion method can combine likelihood maps from multiple bands of hyperspectral imagery into one single more distinctive representation preserving all the information. Experimental results show that HLT not only outperforms all established fusion methods but is at par with the current state-of-the-art hyperspectral target tracking frameworks.