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THE INFLUENCE OF THE RELATIVE ANGULAR VELOCITY BETWEEN SPACE-BASED OPTICAL DETECTOR AND SPACE DEBRIS IN DETECTABLE ANALYSIS

Abstract

When evaluate the detected performance for space-based detector, it is necessary to consider the position and device parameter of the detector, and do crossing analysis thus detectable analysis, gain the detected performance results. Besides the influence of the geometry relationship, the relative angular velocity is also very important to the detectable of the space debris. In the paper, the restriction we considering is the relative angular velocity between space debris and detector in the base of the crossing analysis. The results of different angular velocity were compared, and this situation was explained with detected signal-to-noise theory, while the restriction of the relative angular velocity was deduced. We conclude that the result of the paper is more suitable to analyze the detection performance analysis model of space-based optical detector.