

15th IAA SYMPOSIUM ON SPACE DEBRIS (A6)
Operations in Space Debris Environment, Situational Awareness (7)

Author: Mr. Gongqiang Li
Chinese Academy of Sciences, China

Dr. Hai Jiang
National Astronomical Observatories, Chinese Academy of Sciences, China

Dr. Haowen Cheng
National Astronomical Observatories, Chinese Academy of Sciences, China

Dr. Jing Liu
National Astronomical Observatories, Chinese Academy of Sciences, China

RESEARCH ON MONITORING EFFECTIVENESS OF OPTICAL SATELLITE CONSTELLATION

Abstract

Acquiring observation data of space debris timely is very necessary for better Space Situational Awareness(SSA). A low-cost nano satellite constellation dedicate to observe space debris and avoid space collision. We designed different satellite constellations, and analyzed monitoring effectiveness of these constellations. The constellations composed by different number of satellites can observe 99% of LEO cataloging object and have the ability to make false alarms rate reduce by two orders of magnitude about 24 hours before conjunction. The constellations improved accuracy of information that transmitted to the satellite operators, and operators would take shelter when their assets are in real danger.