SPACE DEBRIS SYMPOSIUM (A6)
Modelling and Risk Analysis (2)

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ORBIT EVOLUTION OF SPECULAR NON-SPHERICAL SPACE DEBRIS OBJECTS WITH HIGH AREA TO MASS RATIO.

Abstract

Space debris object with high area to mass ratio was regularly observed for 14 months. Orbit semimajor axis increased persistently during this period from 14125 to 14260 km. This increase can not be explained with constant radiation pressure assumption common for "spherical" objects with high area to mass ratio. Good coincidence of observed data and long term orbit parameter evaluation was obtained with model of specular non-spherical body. The same approach was applied for analysis of orbits evolution of other space debris with high area to mass ratio. The report shows that long term prediction of orbit evolution of space debris objects with high area to mass ratio can be improved with account of object shape, attitude and surface optical properties.