

Propagation errors analysis of TLEs data

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Errors analysis are made using data from two-line element sets (TLEs). The SGP4/SDP4 propagator was chosen to use for analysis. Besides the uncertainty in a position prediction, downrange errors in the direction of the velocity, as well as radial and cross-track uncertainties are analyzed too.

Errors results are made for classified orbits and single object in lower-altitude orbits (below about 2000 km) in this thesis. According to altitude and eccentricity, the orbits are classified to get the statistic results for debris and R/B which ensure without orbit maneuver. This thesis gave the errors results of single object in several typical orbits. At last analysis are made for errors results.