

Long term evolution or the retired geostationary satellites in 2005

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Eighteen spacecrafts reached their end-of-life during 2005. Ten of them were sent to a graveyard orbit according to IADC recommendation, 10 were reorbited at the border of the protected zone around GEO, three were reorbited insufficiently and two of them did not perform a proper en-of-life disposal maneuver.

Long-term orbital evolution of the retired geostationary objects, which were reorbited after reaching end-of-life during 2005, is studied in this paper. Two-Line Element data is used to fit the area-to-mass ratio of the satellites. The results are used to propagate the spacecraft 200 years into the future. The effects of the luni-solar perturbations, the solar radiation pressure and the oblateness of the Earth will be analyzed.

The results will then be compared with the special case where the spacecraft is reorbited in Sun-pointing position to analyze how this affects long-term evolution of the objects in the geostationary ring.