

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

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A NEW LOOK AT THE GEO AND NEAR-GEO REGIMES: OPERATIONS, DISPOSALS, AND
DEBRIS**Abstract**

Since 1963 more than 900 spacecraft and more than 200 launch vehicle upper stages have been inserted into the vicinity of the geosynchronous regime. Equally important, more than 300 spacecraft have been maneuvered into disposal orbits at mission termination to alleviate unnecessary congestion in the finite GEO region. However, the number of GEO satellites continues to grow, and evidence exists of a substantial small debris population. In addition, the operational modes of an increasing number of GEO spacecraft differ from those of their predecessors of several decades ago, including more frequent utilization of inclined and eccentric geosynchronous orbits. Consequently, the nature of the GEO regime and its immediate surroundings is evolving from well-known classical characteristics. This paper takes a fresh look at the GEO satellite population and the near- and far-term environmental implications of the region, including the effects of national and international debris mitigation measures.