

SPACE DEBRIS SYMPOSIUM (A6)

Poster Session (P)

Author: Mr. Seyed Ali Nasser

Space Generation Advisory Council (SGAC), Canada, ali.nasser@utoronto.ca

PERFORMANCE MAPPING OF SPACE DEBRIS REMOVAL CONCEPTS

Abstract

Space debris discussions initiated with the start of the space age 55 years ago and have seen special interest in current years. This is due to the large increase in the number of space debris which has led to an increased threat of collision with operational space systems and of unsafe reentry.

Due to this increased interest in this area, many different methods have been proposed in recent years for mitigation and space debris removal, some of which have even secured funding from space agencies for further development. These include ground based lasers and space based systems which use electrodynamic tethers, solar sails or inflatable components. While each method has its own pros and cons, some of these concepts seem to be more suitable for the short term and others for the long term.

This paper identifies major performance measures for space debris removal systems based on current rules and regulations and maps the performance of the ADR technologies based on these criteria. The map can help prioritize removal concepts and required technologies in order to better meet current needs.