

20th IAA SYMPOSIUM ON SPACE DEBRIS (A6)
Political, Legal, Institutional and Economic Aspects of Space Debris Mitigation and Removal - STM
Security (8-E9.1)

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SPACE SUSTAINABILITY: TOWARD A MORE COMPREHENSIVE ASSESSMENT OF THE
ORBITAL DEBRIS CHALLENGE

Abstract

This study will evaluate efforts to integrate behavioral and physical models of orbital debris environment. Recent work sought to pair probabilistic debris models with the expected impacts of various debris mitigation approaches including the introduction of economic incentives, new policies and improved regulations. For example, several studies have evaluated to what extent greater compliance with 25-year de-orbit guidelines might impact the projected growth of orbital debris.

The study also evaluates current research into new indicators to measure trends in the space environment. Examples of these indicators include launch intensity, mass and quantity of satellites and other material launched into orbit, estimates of orbit capacity, fragmentation events, insurance premiums, and satellite licensing. Could these new indicators provide the ability to use observable terrestrial metrics to forecast changes in the future orbital debris environment?

Finally, the study seeks to understand how we might develop a more comprehensive evaluation of the risk of space debris, including the probability and severity of physical and economic impacts (both on orbit and on Earth).