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

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EVASIVE MANEUVERS IN SPACE DEBRIS ENVIRONMENT AND TECHNOLOGICAL
PARAMETERS

Abstract

In this paper we present results of the study of collisions between space debris and operational vehicles. We adopt a relative dynamic between the objects on collisional and established a semi-analytical solution for the final trajectories of these objects. The results showed that there are angular ranges in 2D and 3D, in addition to the initial conditions that favor the collisions. These results allowed the establishment of technological parameters of the spacecraft (e.g, fuel reserve) and the feasibility conditions for the achievement of evasive maneuvers before the collision (e.g, time available for the maneuver). The numerical model was tested for speed and distance relative operational between the objects in space activity.