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EFFICIENT ORBIT CONTROL MANEUVERS BASED ON STUDY OF SPACE ENVIRONMENT  
IMPACT ON PERUSAT-1 LIFETIME AND ORBITAL PARAMETERS

**Abstract**

Orbit control maneuvers are performed in coordination with JSpOC, these activities that the Peruvian Space Agency carries out and assumes as its own as pillars to contribute to the preservation of the space environment, as well as other new techniques and technologies under development around the world today, since these facts constitute good practices of space agencies and entities in the use of space. The JSpOC, complements the Collision Risk Management, providing the data necessary for calculating the covariances and evaluating the conjunctions. Since the space weather is not totally predictable, manipulable or negotiable factor, it must be evaluated every day, according to the type of maneuver, the limits of Station Keeping depending on the part of the solar cycle in which we are, and the F10.7 that shows trends to be taken into account (decreasing or increasing) and tuning the Drag constant, analyzing the position of Earth with respect to the Sun (Seasonality). In the same way, the off-modulation coefficients to be considered in the thrusters to optimize the propellant use and life time in avoidance manoeuvres cases. Therefore, this paper aims, based on experience in different types of maneuver simulations, and real cases of manoeuvres, in different stages of the solar cycle, to highlight the impact of Space Weather on propellant use, life time in different orbital positions and epoch. Confirming the impact of space weather on orbital parameters when executing maneuvers according to good practices in space (deorbitation procedures, avoidance maneuvers, space situation awareness).