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SPACE POWER SYMPOSIUM (C3)
Advanced Space Power Technologies and Concepts (3)

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SOLAR SIMULATOR TO CHARACTERIZE SOLAR PANELS.

Abstract

DESIGNED AND DEVELOPED BY: EDUARDO VILLA AND MARCO SAAVEDRA.

THIS INSTRUMENT WILL ALLOW TO PERFORM SIMULATIONS FOR THE MOVEMENT OF SOLAR PANELS MOUNTED ON A SATELLITE (FOR THIS PROJECT, MOUNTED ON A PLATFORM WITH TWO DEGREES OF FREEDOM: ASCENDING/DESCENDING AND ANGULAR MOVEMENT), UNDER SIMILAR CONDITIONS OF LOW EARTH ORBIT: SOLAR RADIATION, ON AVERAGE, 1370 W/m2.

TO ACHIEVE THE GENERATION OF HIGH IRRADIANCE, IT WAS IMPLEMENTED A HIGH POWER LAMP BASED ON HALOGENS, WHICH WAS PLACED ABOVE THE PLATFORM, HAVING THE ABILITY TO MANIPULATE ITS HEIGHT THROUGH THE POST IN WHICH IT WAS PLACED.

THROUGH THE SIMULATIONS CARRIED OUT, THIS PROJECT WILL ALLOW TO DO STUDIES ABOUT THE BEHAVIOR OF PANELS UNDER SPACE CONDITIONS BEFORE EXPLAINED;AND WE COULD DETERMINE SUITABLE DESIGNS FOR ELECTRICAL POWER GENERATION, AS A PART OF A NANOSATELLITE DESIGNED BY THIS AEROSPACE GRUOP.