

SPACE EXPLORATION SYMPOSIUM (A3)
Solar System Exploration (5)

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SERB, A NANOSATELLITE DEDICATED TO OBSERVE THE SUN AND THE EARTH

Abstract

The SERB mission is a future innovative nanosatellite, which is design to improve and pursue the study of the interaction between the Earth and the Sun. The nanosatellite aims to measure on the same platform the absolute value of the total solar irradiance and its variability, the UV solar spectral variability, and the different components of the Earth's radiative budget. Recording these measurements is a business in assiduity, continuity, and overlap. The use of nanosatellites can meet these requirements. SERB will be a precursor, which is proposed for the nanosatellite program of Ecole polytechnique and CNES for a flight in 2020-2021. Instrumental payloads, such as space-based solar radiometer, can acquire the technical maturity for future large missions by flying in a CubeSat. This paper is intended to introduce technical innovations design for this proof-of-concept nanosatellite. Its aim is to demonstrate the ability to build a low-cost satellite with high accuracy measurements in order to have scientific constant flow of data from space.