



Contribution ID: 44

Type: **Talk**

Ecuadorian Synchrotron Space Probe “BUHOSAT”

Monday, 24 September 2018 16:20 (20 minutes)

The “BUHOSAT”, which adopts its name from the university mascot, is a unique 1U CubeSat with an astronomical mission to detect synchrotron radiation. The team composed of scientists and engineers designed a 1U CubeSat capable of carrying this novel mission. The BUHOSAT is the perfect example of the use of current enabling technologies for nano-satellites, commercial of the shelf (COTS) plus indigenous patented technology. It carries two payloads, one that will be used to study the universe and the other one for Earth observation; has quick mobility over one axis to maintain desired attitude during its orbit; provides enough power to carry out its rigorous mission; has 3 independent processing units, and uses active and passive thermal controls; all in one small package of 1U and under 100,000 USD. Most of the design, in this project, can be considered finished. Minimal changes will be done after simulation and testing is completed.

Design, implement and put into orbit a nano-satellite that allows us to obtain the basic scientific and technological experience to continue with more complex experiments and projects within the Ecuadorian Satellite System. Whose potential applications, depending on the need, will be: the radio link of automatic stations for measurement meteorological parameters, photographs of the surface of the earth, in the visible and in infrared parts of the electromagnetic spectrum, to monitoring: temperature changes in volcanic zones, country borders and natural resources.

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Session Classification: Talks

Track Classification: Space Science with CubeSats and Small Sats