SERESSA 2022

The CELESTA Payload - Concept, Development and Radiation Characterization

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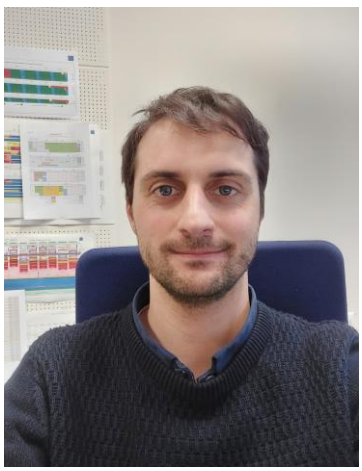
Abstract:

CELESTA is the first CubeSat mission resulting from the collaboration of the University Space Centre of Montpellier (CSUM) and CERN. The talk focuses on the initial design development, the choice of commercial components and the radiation characterization of the CELESTA Payload, realized to measure radiation effects on electronics in Low Earth Orbit environment. Radiation test campaigns were carried out both at component level, with focused proton beams, and at system level in the CERN CHARM facility. Results were compared with the preliminary analysis of the in-flight data.

Short Bio:

Raffaello received his MSc. in Electronics Engineering at the University of Genova (Italy) in 2009. He worked as a controls engineer and beam physicist at LBNL (USA) before joining CERN in 2012 and dedicating to the field of radiation and its effects on electronics. He received a PhD on the development of a CubeSat payload for the CELESTA mission from the University of Montpellier (France) in 2017. Since 2017 he has been working in the CERN Machine Interlock section. His main focus is the development of reliable and fast electronics solutions for the protection of the LHC and its injectors.



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