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SpaceRadMon-NG, the new generation version of space Radiation Monitoring Payload

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Abstract:

After the recent launch of the CELESTA (CErN Latchup Experiment and STudent sAtellite) 1UCubeSat in July 2022, CERN is preparing for the next mission related to monitoring radiation effects in space. The talk introduces the steps taken towards a new generation CERN payload of low power radiation monitoring in space. After discussing the limitations experienced with the CELESTA platform, the new hardware and sensor solutions used in the new development will be presented. The payload is a miniature version of the well-proven radiation monitoring device that is deployed in the Large Hadron Collider (LHC). Thanks to its improved sensor capabilities, low power consumption and easier integrability, it is able to better characterize the space environment and can be used for long term missions. This talk discusses the validation and qualification process applied to this new payload and the different missions for which it has already been selected for its innovative features.

Short Bio:

Alessandro Zimmaro was born in Italy, in 1994. He received the M.Sc. degree in electronic engineering from the University of Federico II of Naples, Naples, Italy, in 2020. He is currently pursuing the Ph.D. degree in system-level testing under radiation with the University of Montpellier, Montpellier, France, and the European Organization for Nuclear Research (CERN), Geneva, Switzerland. He has been with CERN since 2019.



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