

18th International School on the Effects of Radiation on Embedded Systems for Space Applications (SERESSA)

SERESSA 2022

Organizers:



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Accelerator Radiation Environment and Neutron Effects in Electronics

Thursday 8 December 2022 10:10 (50 minutes)

The talk introduces the radiation environment in the Large Hadron Collider (LHC) accelerator at CERN and the radiation-induced effects in electronics, presenting several comparisons with the atmospheric environment. The talk shows how the radiation levels are measured and simulated in critical areas, focusing on thermal and higher energy neutrons, which are the main contributors to SEEs. In addition, the SEEs induced by neutrons between 0.1 and 10 MeV are compared to the overall error rate due to the full neutron spectra, showing that in some cases they can induce more failures than more energetic neutrons. The related Radiation hardness Assurance (RHA) implications are presented.

Presenter: CECCHETTO, Matteo (CERN)