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Introduction to G4SEE: a toolkit for simulating radiation effects in electronics

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Abstract:

G4SEE, a novel Geant4-based Monte Carlo simulation toolkit is being developed at CERN for the radiation effects community, and released as a free and open-source code. It has been already demonstrated and validated experimentally by measurements of inelastic energy deposition single events of monoenergetic neutrons below 20 MeV. These two hands-on lectures will give an introduction on how to use the G4SEE toolkit in simple, but real-life scenarios to simulate, analyse and better understand the nuclear physics of Single Event Effects induced by neutrons and protons in microelectronic structures.

G4SEE website: <https://cern.ch/g4see>

Short Bio:

Dávid Lucsányi was graduated at Budapest University of Technology and Economics (BME) in 2016 as an Applied Physicist specialised in Nuclear Technologies. He joined CERN TOTEM experiment as a Technical student to work on solid-state detector R&D, then European Space Agency (ESA) as a Young Graduate Trainee (YGT) working on the development of Pyxel astronomical imaging detector effect modelling framework. Since 2020, he is working in CERN Radiation To Electronics (R2E) project as a Fellow on Monte Carlo simulations and analyses of Single Event Effects (SEE) and development of the G4SEE simulation toolkit. In his freetime, he works for Puli Space Technologies, as the Lead Payload Scientist of the NASA prize winner PLWS lunar neutron spectrometer instrument.



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