3rd R2EWG Workshop

Report of Contributions

https://indico.cern.ch/e/1602383

Contribution ID: **1** Type: **not specified**

Introduction

Thursday, 20 November 2025 10:00 (10 minutes)

Presenter: DANZECA, Salvatore (CERN)

Contribution ID: **2** Type: **not specified**

BE-CEM-EPR Radiation Test Service: Activities Overview

Thursday, 20 November 2025 10:10 (20 minutes)

Author: FERRARO, Rudy (CERN)

Presenter: FERRARO, Rudy (CERN)

Contribution ID: **3** Type: **not specified**

Universal Control Electronics for Energy Extraction: Radiation Hardness Assurance - Part 1 - PSU

Thursday, 20 November 2025 10:50 (20 minutes)

Author: PIRC, Vasja

Co-author: GEORGAKAKIS, Spyridon (CERN)

Presenter: PIRC, Vasja

Contribution ID: **4** Type: **not specified**

Update on FPGA Radiation Tolerance in CERN control equipments

Thursday, 20 November 2025 10:30 (20 minutes)

Presenter: SCIALDONE, Antonio

Contribution ID: **5** Type: **not specified**

Use for COTS for control equipment for FCC-ee

Thursday, 20 November 2025 11:10 (20 minutes)

Author: DANZECA, Salvatore (CERN)

Co-author: FERRARO, Rudy (CERN)

Presenter: DANZECA, Salvatore (CERN)

Contribution ID: **6** Type: **not specified**

SEL Qualification Methodology for ATS Rad-Tol Control Systems: A Large-Sample Testing Approach

Thursday, 20 November 2025 11:30 (20 minutes)

The reliability of CERN control systems, including power converters, RF systems, and safety electronics, is essential for LHC operation. These systems operate in harsh radiation environments, subject to Total Ionizing Dose (TID), Displacement Damage (DD), and Single Event Effects (SEEs). While cumulative effects can be assessed through part- and system-level testing, stochastic SEEs present a greater challenge due to their random nature. For the High-Luminosity LHC, increased radiation levels combined with strict system failure limits necessitate precise component-level cross-section targets. This paper presents a methodology to propagate system-level SEE requirements down to part-level targets and define qualification conditions, including test fluence and sample quantities. A dedicated setup at the CERN CHARM mixed-field facility enables simultaneous irradiation of large numbers of components, ensuring efficient qualification while maintaining system reliability under HL-LHC conditions.

Author: FERRARO, Rudy (CERN)

Co-authors: Dr ZIMMARO, Alessandro (CERN (BE-CEM/EPR)); FOUCARD, Gilles

Presenter: FERRARO, Rudy (CERN)

Contribution ID: **7** Type: **not specified**

Open Discussions

Thursday, 20 November 2025 11:50 (20 minutes)

Presenter: DANZECA, Salvatore (CERN)