

RD50: radiation-hard technology developments

The next upgrades of the HL-LHC (High Luminosity-Large Hadron Collider) are scheduled to reach fluences of $2 \times 10^{16} \text{ neq/cm}^2$. Silicon detectors will be exposed to high fluences of radiation, and RD50 (Radiation Hard Semiconductor Devices For High Luminosity Colliders) is a CERN R&D collaboration devoted to develop radiation hard silicon detectors for the HL-LHC. The collaboration explores different fields structured in different areas: defect and material characterization explore the macroscopic properties of materials before and after irradiation, detector characterization tests the devices in different techniques, new detector structures develop new devices such as Low Gain Avalanche Detectors LGAD or 3D detectors and full detector systems integrate the electronics to the detector and study the performance under high fluences. The last updates of the collaboration outcomes will be presented.

Primary author: BASELGA BACARDIT, Marta (Instituto de Fisica Corpuscular (ES))

Presenter: BASELGA BACARDIT, Marta (Instituto de Fisica Corpuscular (ES))