

Triplet luminosity lifetime (20' + 10')

Wednesday, 24 November 2021 14:00 (30 minutes)

The present LHC lifetime is directly linked with the radiation dose limit that can be withstood by the beam line elements around the ATLAS and CMS detectors, in particular the insulator material used in the coils of the superconducting magnets composing the final focus triplet string and the normal conducting modules of the separation dipole. The peak dose profile along the aforementioned coils is due to the collision debris generated at the Interaction Point and depends on the coil aperture and several operational parameters, such as beam energy, crossing plane, crossing angle magnitude and sign. Detailed estimations of the dose values reached so far and expected through Run 3 are presented, including the scenario of 1-year extension, and the effect of mitigation measures is quantified.

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