

# Special Losses

D. Mirarchi, et al.

## Abstract

A comprehensive review of special beam loss scenarios during Run 2 is presented, with main focus on studies and actions taken to mitigate their impact on the LHC operation. An overview of Beam Loss Monitor (BLM) threshold strategy aimed at reducing the machine downtime caused by the interaction of the beam with Unidentified Falling Object (UFO) is given. The UFO rate evolution during Run 2 is also provided, together with an estimation of UFO rate at the beginning of Run 3. An unexpected aperture restriction has been detected in the half-cell 15R8 in 2015: the so called Unidentified Lying Object (ULO). Local aperture measurements, ULO evolution during Run 2, mitigation strategy adopted and possible interventions to remove this restriction during the Long Shutdown 2 (LS2) are shown. Sudden increase of losses in the half-cell 16L2 has been the main machine limitation in 2017. Mitigation strategy, lessons learnt and actions taken to avoid repetition of the most probable cause are discussed. Several dumps with similar signature of oscillating orbit with 10 Hz frequency were experienced in the last months of the 2018 run. The present understanding of these events, possible actions and mitigation approach to be taken in future runs are reported.