

Collimation Upgrade Path for the HL-LHC

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 The upgrade strategy for the LHC collimation system relies on various inputs from the LHC operation: loss rates, quench limits of magnet against beam losses, beam stability limit from collimator impedance, etc. The performance assessment based on the LHC Run I entails intrinsic uncertainties because of the differences in beam energy, bunch spacing and intensity, and operating magnet current. The road map for the collimation upgrade is reviewed in light of the 2015 operational experience. While this first year at 6.5TeV cannot be considered fully conclusive for the future performance, as the operational parameters were still far from the design parameters, useful feedback could be accumulated. In this paper, the results of dedicated studies and of analyses of the high-intensity operation are presented and used to review the collimation upgrade baseline choices.

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