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The HL-LHC: Strategies for beam optics commissioning

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Beam optics control in the HL-LHC will present significant challenges, relating to the extremely low-β^* in the two main experiments: ATLAS and CMS. The luminosity delivered to the experiments during the first several hours of HL-LHC fills will be kept constant via β^*-levelling. Such an extensive optimisation will require the commissioning of a large number of optical configurations, further challenging the efficiency of the beam optics measurement and correction methods. Throughout the LHC's run 2, beam-based studies have helped identify critical challenges and their solutions. Based on the experience and the achieved level of optics control, we discuss strategies of HL-LHC optics commissioning and its implications for the experiments.

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Secondary track (number)

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