

# Precision luminometry for tests of the Standard Model at (HL-)LHC

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The most precise measurements of Standard Model processes, including the production of W, Z and Higgs bosons, as well as top quark pairs, require a luminosity precision better than 1% per year at the HL-LHC. The expected harsh experimental conditions with up to 200 interactions per bunch crossing will make this extremely challenging. I summarise the state-of-the-art in luminometry touching new studies of the beam-beam electromagnetic interactions using multiparticle tracking simulations of the intense bunched beams, improved experimental techniques to limit the van der Meer calibration biases, the emittance scan method and Z boson counting to improve integration systematics at the LHC, and the development of new instrumentation for the upgraded CMS detector at HL-LHC.

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