

XXVIII International Workshop on Deep Inelastic Scattering and Related Subjects



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Prospects for QCD, EW and Top Physics at the HL-LHC

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The Large Hadron Collider (LHC) has been successfully delivering proton-proton collision data at the unprecedented center of mass energy of 13 TeV. An upgrade is planned to increase the instantaneous luminosity delivered by LHC in what is called HL-LHC, aiming to deliver a total of about 3000/fb of data to the ATLAS detector at a center of mass energy of 14 TeV. To cope with the expected data-taking conditions ATLAS is planning major upgrades of the detector.

In this contribution we present an overview of the physics reach expected for a wide range of measurements of Standard Model physics at the HL-LHC for the ATLAS experiment, ranging from standard-candle processes as top mass measurement, to measurement of rare processes as multi-boson differential cross section measurements. Particular focus would be given to implications of vector boson scattering to the investigation of electroweak symmetry breaking.

Such studies formed the basis of the ATLAS Collaboration input to one of the chapters of the recent HL/HE-LHC Yellow-Report. An executive summary of this report was then submitted as input to the European Strategy process.

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