



Contribution ID: 351

Type: **Poster Presentation**

Physics potential of ATLAS upgrades at HL-LHC

The High Luminosity-Large Hadron Collider (HL-LHC) is expected to start in 2026 and to provide an integrated luminosity of 3000 fb⁻¹ in ten years, a factor 10 more than what will be collected by 2021.

This high statistics will allow to perform precise measurements in the Higgs sector and improve searches of new physics at the TeV scale.

The luminosity needed is $L \sim 7.5 \cdot 10^{34} \text{ cm}^{-2} \text{ s}^{-1}$, correspondent to ~ 200 additional proton-proton pile-up interactions. To face such harsh environment some sub-detectors of the ATLAS experiment will be upgraded or completely substituted.

In this poster, the performances of the new or upgraded ATLAS sub-detectors will be described, focusing in particular on the new inner tracker and a proposed high granularity time device.

The poster will also show the impact of those upgrades on crucial physics measurements for HL-LHC program.

Experimental Collaboration

ATLAS

Primary author: ROZEN, Yoram (Technion (IL))

Presenter: TESTA, Marianna (INFN e Laboratori Nazionali di Frascati (IT))

Session Classification: Poster session

Track Classification: Higgs and New Physics