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ATLAS Higgs and supersymmetry physics prospects at the high luminosity LHC

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The Higgs physics prospects at the high-luminosity LHC are presented, assuming an energy of sqrt(s) = 14 TeV and a data sample of 3000-4000 fb-1. In particular, the ultimate precision attainable on the couplings measurements of the 125 GeV Higgs boson with SM fermions and bosons is discussed, as well as perspectives on the search for the Standard Model di-Higgs production, which could lead to the measurement of the Higgs boson self-coupling.
Scenarios of SUSY sparticle production, among others, have been used as benchmark to drive the design of the component upgrades, and to evaluate the sensitivity of the upgraded accelerator and detector. This talk will also overview the expected sensitivity that the ATLAS experiment will have to SUSY sparticle production with 3000 fb-1 pf proton-proton collisions collected at a centre of mass energy of 14 TeV.

Experimental Collaboration

ATLAS

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

Presenter: VENTURI, Nicola (CERN)

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