Contribution ID: **61** Type: **Plenary Talk**

Recent Higgs results by the ATLAS experiment and future prospects

Thursday, 26 October 2017 08:30 (30 minutes)

Five years ago, particle physicists announced the discovery of the Higgs boson, the last missing ingredient in the Standard Model.
Since then, the enormous wealth of data collected by the ATLAS experiment has allowed us to zoom in on the properties of this fundamental scalar that is linked to electroweak symmetry breaking, a fundamental ingredient in the model that describes the elementary particles. I will present the latest results on its properties like the mass, width, observation of different decay channels and coupling(structure) and discuss their implications in the context of the Standard Model. Because of the special role of the Higgs boson, the precision measurements can be used to look for physics beyond the Standard Model that are expected to show up at the TeV energies the LHC can probe, by looking for inconsistencies between the predicted and observed properties. I will discuss our strategy, the impact current limits have on these models and describe what new Higgs boson decay channels and properties we hope to be able to observe in the current LHC run(s).

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Session Classification: Plenary Talks

Track Classification: High Energy Physics, Astrophysics and Cosmology (covering Hadron Structure, Phases of Nuclear Matter, QCD, Precision Measurements with Nuclei, Fundamental Interactions and Neutrinos)