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Recent Highlights in Higgs Physics with the ATLAS Experiment

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The discovery of the Higgs boson in 2012 by the ATLAS and CMS experiments at the Large Hadron Collider (LHC) marked a major milestone in particle physics. Since then, Standard Model (SM) Higgs processes have been studied with unprecedented precision, extending into kinematically challenging regimes and rare production and decay modes. These precision measurements not only test the SM but also offer a promising avenue to constrain new physics effect through the Effective Field Theory (EFT) approach. Some of the measurements also shed light on key Higgs properties, including its charge-parity (CP) structure and total decay width. This talk presents recent Higgs boson measurements from the ATLAS experiment using Run-2 and Run-3 data, spanning multiple decay channels and production modes, and highlights the diverse analysis strategies employed by these analyses.

Keyword-1

ATLAS experiment

Keyword-2

Higgs

Keyword-3

Effective Field Theory

Author: CHEN, Jiayi (Simon Fraser University (CA))

Presenter: CHEN, Jiayi (Simon Fraser University (CA))

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