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Measurements of the Higgs boson mass and width with the ATLAS detector

This talk presents recent precision measurements of key properties of the Higgs boson using the full dataset of proton-proton collisions at $\sqrt{s}$ = 13 TeV collected during Run 2 of the LHC by the ATLAS experiment. The Higgs boson mass is determined with high accuracy through its decays into two photons and four leptons, and the adopted analysis strategies and experimental techniques will be discussed in detail, highlighting their impact on the measurement. In addition, the talk will cover indirect determinations of the Higgs boson total width, an essential parameter for understanding the Higgs sector. While the width is too small to be directly measured at the LHC, constraints are obtained via off-shell Higgs production in ZZ and WW final states, through the 4top final state, and through interference effects in the diphoton channel. The results represent the most up-to-date measurements from ATLAS and provide important insights into Higgs boson properties.

Secondary track

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