

Fiducial and differential cross-section measurements in the di-photon channel using full Run2 dataset at ATLAS

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Since the discovery of a scalar particle with mass at 125 GeV in the experiments ATLAS and CMS at LHC, different measurements based on its properties have been performed and the observations nicely correspond to the Higgs boson predicted by the Standard Model of particle physics. Among these measurements, the fiducial and differential cross-section play an important role in the test of the SM predictions as well as in the probe for BSM physics contributions exploring a variety of physics observables. Given that these measurements are performed in a specific region of the phase space (fiducial region), the model dependence is reduced. In this talk, the latest results on the differential and fiducial cross-section of the Higgs boson decay in the di-photon channel with full Run2 dataset (139 fb⁻¹) collected with ATLAS experiment will be discussed.

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