

Property measurements with Higgs to gamma gamma at ATLAS

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Recent results on coupling measurements in the bosonic decay modes have confirmed the Higgs-like properties of the particle discovered in 2012 by the ATLAS and CMS collaborations. Angular correlations of the Higgs decay products or its boost will give further insight into the underlying kinematic properties of the signal production and decay. With the accumulated integrated luminosity of 20/fb in 2012 and the high signal selection efficiency the di-photon decay channel is ideally suited for property measurements of this newly discovered Higgs boson. In this talk we present differential cross-section measurements in the di-photon decay channel, corrected for experimental acceptance and resolution. The amount of background, mainly from SM di-photon production and hadronic jets, is estimated from di-photon invariant mass sidebands and subtracted. We focus on the methods and results of these property measurements, which play an important role in the understanding of the true nature of electroweak symmetry breaking.

APS member ID

61150581

Primary author: Mr SAXON, James (University of Pennsylvania)

Presenter: Mr SAXON, James (University of Pennsylvania)

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