IOP 2014 Joint HEPP & APP Group Meeting



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Evidence for Higgs Boson Decays to the $\tau\tau$ Final State with the ATLAS Detector

Tuesday 8 April 2014 16:00 (15 minutes)

I will present results of a search for the 125 GeV Higgs boson decaying to a pair of tau leptons. The dataset used is $20.3 {\rm fb}^{-1}$ of proton-proton collision recorded by the ATLAS detector at a centre of mass energy of 8 TeV. The observed (expected) deviation from the background only hypothesis corresponds to a significance of 4.1 (3.2) standard deviations. The measured signal strength is $\mu = 1.4^{+0.5}_{-0.4}$.

This constitutes evidence for the existence of Higgs to $\tau\tau$ decays and is consistent with the Standard Model expectation of a Higgs Boson with mass 125 GeV.

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