

Abstract Submitted
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Search for a Higgs boson in the ditau decay with ATLAS XIN
CHEN, University of Wisconsin-Madison, ATLAS COLLABORATION — Following the discovery of a Higgs-like particle with a mass around 125 GeV in the diphoton, ZZ and WW decay modes, it is important to search for a Higgs boson decaying into fermion pairs such as $\tau\tau$ and $b\bar{b}$. These decays are also very important in the MSSM scenario. The observation or non-observation of these decay modes could have important implications on SM physics and new physics. I will report recent SM $H \rightarrow \tau\tau$ search result in the ll , lh and hh channels using pp collision data collected by ATLAS at $\sqrt{s} = 7$ TeV and $\sqrt{s} = 8$ TeV. I will focus on background estimations, event categorization strategy and multivariate techniques. Interpretations of the final observed data events and SM predictions will be presented.

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