Contribution ID: **32** Type: **Oral Presentation**

Search for the 2HDM neutral CP-odd pseudoscalar Higgs, A, in the A to Zh channel in sqrt(s) = 8 TeV pp collisions with multilepton final states using the ATLAS detector

Thursday, 10 July 2014 15:00 (20 minutes)

Abstract content
   (Max 300 words)
Formatting &
Special chars

The pseudoscalar Higgs, A, is a predicted particle of many extensions of the minimal Standard Model, known as Two Higgs Doublet Models (2HDMs), where the Higgs sector is extended to two doublets of scalar fields. The decay for $A \longrightarrow Zh$ includes the Standard Model-like Higgs boson h in the final state and leads to events with isolated leptons. By assuming that the Standard Model-like Higgs boson h is the newly discovered Higgs boson with a mass of 125 GeV, we are able to search for the pseudoscalar Higgs at and below the TeV scale. Results of the search for a pseudscalar Higgs boson in the $A \longrightarrow Zh \longrightarrow \ell\,\ell\,\tau\,\tau$ channel, where $\ell \neq \tau$ and the tau leptons decay hadronically, are presented. Studies on data-driven background estimation methods, signal optimization techniques, and the statistical interpretation of results are shown.

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MSC

Main supervisor (name and email)
and his / her institution

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Session Classification: NPRP

Track Classification: Track B - Nuclear, Particle and Radiation Physics