



HEP 2013
Stockholm
18-24 July 2013



Contribution ID: 629

Type: **Poster Presentation**

Search for the Higgs Boson decaying into taus further decaying into same-flavour leptons

The search for the Higgs boson decaying into taus is presented. The focus is on same-flavoured leptonic decay modes of the taus ($H \rightarrow \tau\tau \rightarrow ll$ where $ll = ee, \mu\mu$). Due to the small branching fraction of tau pairs decaying into pairs of same-flavour leptons and the large $Z \rightarrow ll$ background contamination, sophisticated background suppression methods are required that differ from the analyses in the other $H \rightarrow \tau\tau$ decay channels. The results that will be presented are based on the full dataset obtained at the CMS experiment in the years 2011 and 2012. These results are expressed in terms of upper limits on the standard model Higgs production cross section.

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Track Classification: Higgs and New Physics