

Measurement of the Higgs boson production cross section using the $H \rightarrow \tau\tau$ process in Run 2 ATLAS data

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A measurement of the Higgs boson cross section using $H \rightarrow \tau\tau$ decays is performed, with the result split into 4 production modes, with both hadronic and semi-hadronic decays considered. Data was taken by the ATLAS detector during Run 2 of CERN's Large Hadron Collider, with a center-of-mass energy of 13 TeV, resulting in 139 fb^{-1} of proton-proton collision data. Full unblinded results are shown. Special attention is paid to the associated top quark pair production mode, including a proposed differential cross section measurement of the transverse momentum of the Higgs boson using a neural network to improve the resolution.

Career stage

Graduate student

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