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## Search for heavy Higgs bosons decaying into two tau leptons with the ATLAS detector using pp collisions at $\sqrt{s} = 13$ TeV

A search for heavy neutral Higgs bosons is performed using the LHC Run-2 data, corresponding to an integrated luminosity of 139/fb of proton-proton collisions at  $\sqrt{s} = 13$  TeV recorded with the ATLAS detector. The search for heavy resonances is performed over the mass range 0.2–2.5 TeV for the  $\tau^+ \tau^-$  decay with at least one tau-lepton decaying into final states with hadrons. The data are in good agreement with the background prediction of the Standard Model. In the Mh125 scenario of the Minimal Supersymmetric Standard Model, values of  $\tan(\beta) > 8$  and  $\tan(\beta) > 21$  are excluded at the 95% confidence level for neutral Higgs boson masses of 1.0 and 1.5 TeV, respectively, where  $\tan(\beta)$  is the ratio of the vacuum expectation values of the two Higgs doublets.

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ATLAS

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