Search for charged Higgs bosons in the $\tau$+jets final state using 14.7 fb$^{-1}$ of pp collision data recorded at $\sqrt{s} = 13$ TeV with the ATLAS experiment

BLAKE BURGHGRAVE, Northern Illinois Univ, ATLAS COLLABORATION — The experimental observation of charged Higgs bosons, $H^{\pm}$, which are predicted by several models with an extended Higgs sector, would indicate physics beyond the Standard Model. This note presents the results of a search for charged Higgs bosons in 14.7 fb$^{-1}$ of pp collision data at $\sqrt{s} = 13$ TeV recorded by the ATLAS detector at the LHC. The search targets the $\tau$+jets channel in top-quark-associated $H^{\pm}$ production with a hadronically decaying W boson and $\tau$ lepton in the final state. No evidence of a charged Higgs boson is found. For the mass range of $m_{H^{\pm}} = 200 - 2000$ GeV, upper limits are set on the production cross section of the charged Higgs boson with the subsequent decay $H^{\pm} \to \tau\nu$ in a range of 2.0 - 0.008 pb.

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