

Search for Generic Heavy Higgs Boson Using 13 TeV pp Collision Data at ATLAS

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A search for a fermi-phobic heavy Higgs boson via the $pp \rightarrow W^\pm H \rightarrow W^\pm W^\pm W^\mp$ process with 139 fb^{-1} of pp collision data at $\sqrt{s} = 13 \text{ TeV}$ collected by the ATLAS detector is presented.

The heavy Higgs boson has potential dimension-6 effects in an effective field theory context, which can cause significant kinematic deviations from those predicted within the Standard Model. Events with two same-sign leptons (e or μ) in association with one large-R jet or two small-R jets with an invariant mass consistent with a hadronically decaying W -boson are analyzed to test for the presence of effects from new physics.

Career stage

Graduate student

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