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(Withdraw) Search for resonant pair production of Higgs bosons in the bbbb final state using 139 fb^{-1} of $\sqrt{s}$ = 13 TeV pp collision data with the ATLAS detector

A search for resonant Higgs boson pair production in the four b-jet final state is conducted. The analysis uses 139 fb^{-1} of pp collision data at $\sqrt{s}$ = 13 TeV collected with the ATLAS detector. The analysis is divided into two regimes, targeting Higgs boson decays which are reconstructed as pairs of b-tagged small-radius jets or as single large-radius jets associated with b-tagged track-jets. Spin-0 and spin-2 benchmark signal models are considered, both of which correspond to resonant HH production via gluon–gluon fusion. No significant evidence for a signal is observed. Upper limits are set on the production cross-section times branching ratio for a new resonance in the mass range from 251 GeV to 5 TeV decaying to Higgs boson pairs.

Career stage

Postdoc

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