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Search for nonresonant Higgs boson pair production in the $b(b)\overline{b}(\overline{b})$ final state at root $s=13$ TeV

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Abstract


Results of a search for nonresonant production of Higgs boson pairs, with each Higgs boson decaying to a $b(b)\overline{b}(\overline{b})$ pair, are presented. This search uses data from proton-proton collisions at a centre-of-mass energy of 13 TeV, corresponding to an integrated luminosity of 35.9 fb⁻¹, collected by the CMS detector at the LHC. No signal is observed, and a 95% confidence level upper limit of 847 fb is set on the cross section for standard model nonresonant Higgs boson pair production times the squared branching fraction of the Higgs boson decay to a $b(b)\overline{b}(\overline{b})$ pair. The same signature is studied, and upper limits are set, in the context of models of physics beyond the standard model that predict modified couplings of the Higgs boson.

Keywords


















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