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Searching for resonant HH production in the bbqq'lnu final state at CMS

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New, massive bosons could be found with the LHC. Theories with warped extra dimensions and supersymmetry predict the existence of such resonances, which for some model parameters, have a significant branching fraction to two Higgs bosons. A search for such particles in the HH->bbWW->bbqq'lnu channel with the CMS detector is presented. The analysis uses data collected during Run 2 of the LHC at a centre-of-mass energy of 13 TeV. Background is suppressed by reconstructing the full HH decay chain using jet substructure techniques and the identification of leptons with nearby, boosted jets. A two-dimensional template fit in the plane of resonance the mass and the H->bb mass is used to characterize potential signal with this final state.

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