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A search for light Higgs bosons in supersymmetric decay cascades at CMS.

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This talk presents a search for pairs of light Higgs bosons produced in NMSSM decay cascades using the CMS detector. The analysis uses data sets corresponding to the 2016 and 2017 proton-proton collisions at a centre-of-mass energy of 13 TeV. The final state targeted is that where both Higgs bosons decay into $b\bar{b}$ pairs. The signal model is of interest because, under certain mass configurations, the missing transverse energy in the events can be highly suppressed. This produces an all jet final state that typical supersymmetry searches would not be sensitive to. In suppressing the missing transverse energy, the Higgs bosons become highly boosted objects, leading to a small angular separation between the b-quarks. Consequently, each $b\bar{b}$ pair is reconstructed in a single AK8 jet. Substructure techniques are applied to the AK8 jets to measure the mass of the reconstructed object, and to determine how likely it is that the AK8 jet originates from two b-quarks.

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