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Search for New Resonances Decaying to Boosted Higgs Signatures at CMS

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Summary

Beyond the standard model theories like composite Higgs models, involving extra dimensions and/or extended gauge boson sectors, predict resonances with large branching fractions into a pair of Higgs bosons or a Higgs boson and a vector boson with negligible branching fractions to light fermions. We present an overview of searches for new physics containing Higgs bosons in the final state, using proton-proton collision data collected with the CMS detector at the CERN LHC. These results use novel analysis techniques to identify and reconstruct highly boosted Higgs boson and vector boson final states that are created in these topologies. These techniques provide increased sensitivity to new high-mass particles over traditional search methods.

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