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Search for New Resonances Decaying to Boosted Diboson Signatures at CMS

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Summary

Beyond the standard model theories like Extra-Dimensions and Composite Higgs scenarios predict the existence of very heavy resonances compatible with a spin 0/1/2 particles with large branching fractions in pairs of standard model bosons and negligible branching fractions to light fermions. We present an overview of searches for new physics with boosted vector bosons (W,Z) in the final states, using proton-proton collision data collected with the CMS detector at the CERN LHC. Most results use novel analysis techniques to identify and reconstruct highly boosted 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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