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Searches for heavy resonances decaying into Z, W, and Higgs bosons at CMS

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We present a summary of searches for new heavy resonances decaying into pairs or triplets of bosons, performed on proton-proton collision data collected with the CMS detector at the CERN LHC at a center-of-mass energy of 13 TeV. A common feature of these analyses is the boosted topology, namely the decay products of the considered bosons (both electroweak W, Z bosons and the Higgs boson) are expected to be highly energetic and close in angle, leading to a non-trivial identification of the quarks and leptons in the final state. The exploitation of jet substructure techniques allows to increase the sensitivity of the searches where at least one boson decays hadronically. Various background estimation techniques are adopted, based on data-MC hybrid approaches or relying only in control regions in data. Results are interpreted in the context of multiple scenarios beyond the standard model.

Summary

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