

Phenomenology 2021 Symposium



Contribution ID: 1183

Type: BSM

Search for heavy resonances in boosted jet plus MET final state in CMS

Monday, 24 May 2021 16:45 (15 minutes)

We present the search for heavy resonances decaying to a pair of bosons, WZ or ZZ, where one Z decays to a pair of neutrinos, and the other W or Z boson decays to a merged jet due to the boost. At the LHC these resonances can be produced through quark/anti-quark annihilation, gluon-gluon fusion, or weak vector boson fusion (VBF) processes. Tagging techniques for both forward jets produced in the VBF process and for identifying quarks from W/Z decays which fragment into a merged jet will be discussed. Challenges to traditional semi-visible resonance search techniques, which arise from a confluence of polarization effects and a partially reconstructed final state, will be presented. Finally, recent results in the context of scenarios beyond the standard model using LHC Run-2 datasets with the CMS detector will be given.

Summary

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Session Classification: BSM II