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New physics searches in top production processes using machine learning

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The angular moments for the Z boson can be used as analyzers for the underlying production dynamics for Z associated top pair and single top processes. We show that the angular moments for the Z boson can boost new physics sensitivity in the $t\bar{t}Z$ processes at the high luminosity LHC (HL-LHC), using machine learning techniques. We present the HL-LHC sensitivity to new physics effects parametrized in terms of the Standard Model Effective Field theory framework.

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