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Probing EFT models using associated top production in multiple lepton final states

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A search for new physics in top quark production with additional final-state leptons is performed with 138 fb-1 of proton-proton collisions at √s = 13 TeV, collected by the CMS detector during 2016, 2017, and 2018. Using the framework of effective field theory (EFT), potential new physics effects are parametrized in terms of 26 dimension-six EFT operators. The data are divided into several categories based on lepton multiplicity, total lepton charge, jet multiplicities, and b tagged jet multiplicities. Kinematic variables corresponding to the leading pT pair of leptons and jets as well as the pT of on-shell Z bosons are used to extract the 95% confidence intervals of the 26 dimension-six EFT operators. No significant deviation with respect to the SM prediction was found.

[zoom]

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