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Measurement of top quark's charge asymmetry in boosted lepton+jets decays and EFT interpretation using Run2 CMS data

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The measurement of the charge asymmetry in top-antiquark pairs is presented using data collected by the CMS detector with proton-proton collisions and center of mass energy of 13 TeV. The full Run 2 data is used, corresponding to an integrated luminosity of 138 fb^{-1} . Events with exactly one lepton (an electron or muon), at least two jets and missing transverse energy are considered. The latest top tagging technique is used to identify hadronically decaying top quarks. Our final phase space targets both low and high-mass regions where the final state objects can be isolated, semi resolved, or highly collimated. The highly boosted events in our sample is enhanced in valence quark production and thus expected to be more sensitive to deviations in top quark properties, caused by BSM processes. We aim to leverage the precise measurement of the top quark's charge asymmetry, cross-section, and spin correlation properties to interpret any deviation from the Standard Model prediction in the framework of Effective Field Theory (EFT).

Mini Symposia (Invited Talks Only)

Plenary (Invited talks only)

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