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CMS Results on ttZ Production

Top quark pair production in association with a Z boson (ttZ) is a rare process within the Standard Model (SM) that provides a stringent test of SM predictions and sensitivity to potential new physics. We present measurements of ttZ production with the CMS detector, using the full Run 2 dataset of proton–proton collisions at a center-of-mass energy of 13 TeV. Due to detector acceptance effects leading to substantial overlap in the observed jet multiplicity distributions, and interference from next-to-leading-order QCD corrections, ttZ is measured in combination with the tWZ process. The analysis targets final states with three or four charged leptons and yields a combined cross section of σ(ttZ+tWZ)=1.14±0.05 (stat)±0.04 (syst) pb. Differential cross sections are also measured in the three-lepton final state.

Author: HOSSEINI, Yasaman (Institute for Research in Fundamental Sciences (IR))

Presenter: HOSSEINI, Yasaman (Institute for Research in Fundamental Sciences (IR))