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**Measurement of the charge asymmetry in highly boosted top-quark pair production in pp collision data collected by the CMS experiment** HUGO BECERRIL, University of Illinois at Chicago, CMS COLLABORATION COLLABORATION — As a consequence of charge asymmetry in relevant processes for heavy flavor production in the LHC, top quarks are produced preferentially in the direction of the incoming quark. This results in more forward top quarks and more central top antiquarks. A central–forward charge asymmetry for the $tt$ _production, referred to as the charge asymmetry (Ac) can be altered by several BSM processes. In this report, we will discuss an inclusive and differential measurement of the charge asymmetry as function of the invariant mass of $tt$ _system in highly boosted top-quark pair production using the full Run II CMS data at a center of mass energy of = 13 TeV. To identify jets corresponding to boosted tt _events, we use substructure variables compatible with the hadronic decay of the top quark. The employment of two DNNs is used to suppress Standard Model (SM) background processes in two steps, first a QCD killer DNN and a second DNN to separate ttbar from all the other backgrounds. Finally, we will discuss the introduction of regularized unfolding techniques applied to correct bin-by-bin smearing due to finite detector resolution, limited acceptance, and event selection.

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