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Measuring the $t\bar{t}$ forward-backward asymmetry using semileptonic final states at 8 TeV with the CMS detector LEI FENG, NICK EMINIZER, MORRIS SWARTZ, Johns Hopkins University, CMS COLLABORATION — This talk presents a measurement of forward-backward asymmetry in $t\bar{t}$ production. The data sample corresponds to $19.7\,\mathrm{fb}^{-1}$ of integrated luminosity in proton–proton collisions at $\sqrt{s} = 8\,\mathrm{TeV}$ collected by the CMS experiment at the LHC. Events selected contain a single isolated muon or electron, with four or five jets of which two are b-tagged. A template technique is used to extract the asymmetry from the difference in the top quark kinematic distribution relative to the boost direction of the $t\bar{t}$ center of mass system. This technique is based upon a linear extension of the tree-level cross section for $q\bar{q}$ initial states and it sensitively isolates those initial states from gg/qg initial states. The quantity produced by this technique is already corrected to parton level and is directly comparable to similar quantities derived from the Tevatron measurements.

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