



Contribution ID : 1001

Type : Oral presentation

Top quark pair production and top quark properties at D0

Thursday, 3 July 2014 15:55 (20)

Result of merged abstracts:

We present the most recent measurement of the top quark pair cross section with the D0 detector at the Tevatron proton-antiproton collider in the lepton plus jets and dilepton channels using the full D0 Run II data corresponding to an integrated luminosity of 9.7/fb. We use the measured inclusive cross section to extract the top quark mass via the $t\bar{t}$ cross section dependence from the top quark mass. We also present the measurements of differential distributions of top quarks in the lepton plus jets channel using again the full D0 Run II data. The measured spectra, binned in several observables, are corrected to parton level and compared to the spectra obtained from the Monte Carlo simulation and QCD at approximate NNLO.

We present the measurement of the forward-backward asymmetry in top antitop quark pair production in proton antiproton collisions in the lepton plus jets and dilepton final states. Measurements use the full data set collected by D0 in Run II corresponding to an integrated luminosity of 9.7/fb. We present the most recent measurements of the lepton-based asymmetries in both lepton+jets and dilepton final states and their combination. We also present the measurement of the top quark based asymmetry inclusively as well as differentially in $m(t\bar{t})$. These results are corrected for efficiency, acceptance and resolution effects to the parton level. Measurements are compared to theory predictions.

We present results of top quark property studies with the D0 detector in $p\bar{p}$ collisions at a center-of-mass energy of 1.96 TeV at the Tevatron collider. In particular we discuss the measurement of spin correlations using the matrix element technique. The full D0 data set corresponding to an integrated luminosity of 9.7 fb⁻¹ is analyzed. We also discuss the new D0 measurement of the fraction of $t\bar{t}$ events produced via the gg fusion process and an updated measurement of the top quark charge.

Summary

Primary author(s) : Prof. VAN KOOTEN, Rick (Indiana University)

Presenter(s) : Prof. DEMINA, Regina (Rochester)

Session Classification : Top-quark and ElectroWeak Physics

Track Classification : Top-quark and ElectroWeak Physics