1)
ttbar Xsec measurement with D0 at the Tevatron at sqrt(s)=1.96 TeV
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in the muon+jets channel

Name: Tobias Golling
Institution: Bonn University
Email: golling@fnal.gov
Category: F6 (Heavy Quarks)
Category: Experimental

A measurement of the $t\bar{t} \rightarrow \mu \nu$ + jets cross section is presented using an integrated luminosity of more than $150\;\rm pb^{-1}$ of data taken during Run II by the D0 detector at the Fermilab Tevatron. The measurement proceeds by detecting all particles in the final state, which are a muon and a neutrino from the W decay, two jets from the second W decay, and two b-jets. Jets are identified by the Liquid Argon calorimeter. Muons are identified by the widely upgraded muon system, and their momentum measured with the new D0 central tracking system. The ttbar signal is extracted by either identifying b-jets by a soft charged lepton accompanying the jet or by selecting the special topology of the $t\bar{t}$ events using kinematic variables.

2)

Measurement of the top pair production cross section at the D0
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experiment using secondary vertex b-tagging in the lepton+jets channel
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Name: Jonas Strandberg
Institution: Stockholm University
Email: jonass@physto.se
Category: F6 (Heavy Quarks)
Category: Experimental

A measurement of the top pair production cross section in the $\mbox{t\bar{t}\to b\bar{b}q\bar{q}\mu\nu}$ channel using secondary vertex b-tagging is presented. The data was taken with the D0 detector during the Run II of the Tevatron. The selection criteria, efficiencies and background contributions are discussed.

3)

Measurement of the top pair production cross section in the
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e+jets channel at D\O

Name: Marc-Andr\'e Pleier \par
Institution: University of Rochester \par
Email: pleier@fnal.gov \par
Category: F6 (Heavy Quarks) \par
Category: Experimental

We discuss the production of $t\bar{t}$ pairs at a centre of mass energy of 1.96 TeV at the D\O~experiment at the Tevatron proton-antiproton Collider at Fermilab. According to the standard model, the top quark decays predominantly into W bosons and b quarks. We present the results of a study of the cross section in the e+jets channel, where one W boson decays into an electron and a neutrino while the other W boson decays into a quark-antiquark pair. The final state is therefore characterised by an electron, missing transverse energy and four jets. The top signal in the data sample is enhanced by selection criteria based on the topology of the event, and through b-jet identification via soft muons.

4)

Measurement of the top pair production cross section in the
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lepton+jets channel at D\O using the Counting Signed Impact Parameter
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method.

Name: Sasha Khanov
Institution: University of Rochester
Email: khanov@fnal.gov
Category: F6 (Heavy Quarks)
Category: Experimental

<<<<<<<<<< an alternative speaker could be Gustavo Otero, >>>>>>>>>>
<<<<<<<<<< depending on conference talks offered to Shasha >>>>>>>>>>

A recent measurement of the $t\bar{t}$ production cross-section in the lepton+jets channels with the D0 detector at $\sqrt{s}=1.96\;\rm TeV$ using the lifetime-tagging techniques is presented. The tagging method, Counting Signed Impact Parameter (CSIP), looks for the minimum number of tracks with large impact parameter significance with respect to the primary vertex. The $t\bar{t}$ cross-section is estimated from the combination of the e+jets and mu+jets channels.

5)
Measurement of the Top Pair Production Cross Section Using
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the Dimuon and the Di-Electron Decay Channel in Run II of the D0 Experiment
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Name: Susan Burke
Institution: University of Arizona
Email: sburke@physics.arizona.edu
Category: F6 (Heavy Quarks)
Category: Experimental

We present a measurement of the $t\bar{t}$ production cross section in p-pbar collisions at $\sqrt{s} = 1.96\;\rm TeV$ using the dimuon and the di-electron decay channel. The data were collected by the D0 experiment during Run II of the Fermilab Tevatron. Results on the

efficiencies and background contributions used to determine the
production cross section in the dimuon and the di-electron decay
channel are presented. Sources of systematic error are also
discussed.

6)
Measurement of the top pair production cross section in the dilepton
channels at the D0 experiment using b-tagging.

Name: Sara Lager
Institution: Stockholm University
Email: sara@physto.se
Category: F6 (Heavy Quarks)
Category: Experimental

A measurement of the top pair production cross section in the
\mbox{$t\bar{t} \to b\bar{b} ll \nu\nu$} channel is presented using
data from \mbox{Run II} of the Tevatron collider at Fermilab. In this
analysis the final event selection is done by requiring at least one
b-jet identified by the presence of a displaced vertex.

7)
Measurement of the top pair production cross section in the
$t\bar{t} \rightarrow b\bar{b} e \mu \nu \nu$ cross-section
channel at the D0 experiment.

Name: Prolay Kumar Mal
Institution: TIFR, India
Email: prolay@fnal.gov
Category: F6 (Heavy Quarks)
Category: Experimental

With the enhanced luminosity and slightly higher centre of mass energy
in Tevatron Run-II compared to Run-I, the many more $t\bar{t}$ events
are expected. Amongst the dileptonic decay-channels of $t\bar{t}$, the
$e-\mu$ decay-channel is least contaminated by the background. The
major background contributions in this channel are made by the $Z
\rightarrow \tau \tau \rightarrow e \mu$ and $WW \rightarrow e \mu$
processes. In addition to these, due to the detector effects the same
event topology (viz., e, μ, jets and Missing ET) can be mimicked
by the processes like W+jets (where the W decays into e/μ),
QCD, $Z \rightarrow bb$, $Z \rightarrow cc$, etc. A complete
cross-section analysis consisting of optimization of the selection
criteria to enhance the signal to background ratio will be presented.

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properties

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8)

Measurement of the top quark mass with D0 at sqrt(s)=1.96 TeV
in the di-lepton channel

Name of Speaker : Sarosh N. Fatakia
Institution : Boston University
email address : sfatakia@buphy.bu.edu
Sorting Category : F6. Heavy Quarks
Title : Measurement of the mass of the top quark in the dilepton channel

"We have measured the mass of the top quark in the dilepton channel
using data collected by the D0 experiment during Run 2 of the Fermilab
Tevatron. We discuss the method used, and the statistical and
systematic uncertainties in the result. We compare our result with
results from Run 1 data of the Tevatron and with results from other
decay channels. The measurement of the top quark mass helps constrain
the mass of the Higgs boson within the framework of the Standard
Model."

9)
Measurement of the Top Quark Mass in the Dielectron Channel
at the D0 Experiment in Run II Using the Neutrino-Weighting Method

Name: Joe Kozminski
Institution: Michigan State University
Email: jkozmins@fnal.gov
Category: F6 (Heavy Quarks)
Category: Experimental

Using data collected with the D0 detector at the Tevatron collider in
Run II, a preliminary measurement of the top quark mass will be
presented. The final state used consists of two electrons, two
neutrinos and two b-quark jets (dielectron channel), resulting from
the production and decay of a $t\bar{t}$ pair. The event selection and
the method of determining the top mass from this final state, taking
into account background contributions, will be described.

10)

Measurement of the Top mass in D0 using the Ideogram method

Name: Martijn Mulders
Institution: Fermilab
Email: mulders@fnal.gov
Category: F6 (Heavy Quarks)
Category: Experimental

A new measurement of the Top mass in the lepton+jets channel is
presented, and its application to D0 Run-II data is discussed. The
analysis is based on the kinematic fit used by D0 for the original Run
I top mass measurement, but a substantial improvement in statistical

uncertainty is achieved by the inclusion of more information from the constrained fit. Rather than choosing only the lowest χ^2 jet solution and fitting the mass spectrum to MC templates, a likelihood is calculated for every event. The event likelihood takes into account all possible jet permutations, the possibility that the event was background, and the estimated error on the fitted mass for each jet permutation. The statistical sensitivity is further enhanced by including the hypothesis of an additional jet from final state gluon radiation and taking into account b-tagging information. The consequences for systematic uncertainties will be discussed as well.

11)

Measurement of the Top Quark Mass with the Run-II data at D\{0} using
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the matrix element method

Name: Philipp Schieferdecker
Institution: Ludwig-Maximilians-University Munich
Email: schiefer@fnal.gov
Category: F6 (Heavy Quarks)
Category: Experimental

<<<<<<<<<< an alternative speaker could be Kevin Kroeninger, >>>>>>>>>>
<<<<<<<<<< depending on the funding situation for Philipp >>>>>>>>>>

A promising approach for the measurement of the mass of the Top Quark at the D\{0}-experiment/FNAL will be presented. It is based on the use of the full kinematic information of each selected event. The production matrix element, as a measure of probability for being a $t\bar{t}$ event, is calculated for each event separatly and a likelihood method is used to obtain the mass of the Top Quark. The application to Run-I data showed a statistical uncertainty which was reduced by a factor of about 2 compared to previously used methods. The method will be presented including a comparison between the Run-I and Run-II analysis.

12)
Towards a Measurement of the W-boson Helicity in Top Quark Decays
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Using the Muon Plus Jets Decay Channel in Run II of the D0 Experiment
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Name: Bryan Gmyrek
Institution: University of Arizona
Email: gmyrek@physics.arizona.edu
Category: F6 (Heavy Quarks) or F3 (Electroweak Interactions)
Category: Experimental

We present an analysis of the W-boson helicity in top quark decays using the muon plus jets decay channel. The data were collected by the D0 experiment during Run II of the Fermilab Tevatron. The W-boson helicity is determined using distributions of cos(theta*) and the transverse momentum of the muon. Monte Carlo templates of these variables that vary the fractions of the W-boson helicity are used to fit to the data. Sources of systematic error are also discussed.

13)

Search for Narrow $t\bar{t}$ Resonances in $p\bar{p}$ Collisions
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at $\sqrt{s} = 1.8\;\rm TeV$.

Name: Supriya Jain
Institution: University of Oklahoma
Email: sjain@fnal.gov
Category: F6 (Heavy Quarks)
Category: Experimental

A search for narrow resonances that decay into $t\bar{t}$ pairs has been performed using $130\;\rm pb^{-1}$ of data in the lepton+jets channel collected by the D0 detector in $p\bar{p}$ collisions at $\sqrt{s} = 1.8\;\rm TeV$. There is no significant deviation observed from the standard model predictions at a top-quark mass of $175\;\rm GeV/c^2$. Therefore upper limits at the 95\% confidence level on the product of the production cross section and background fraction to $t\bar{t}$ for narrow resonances as a function of the resonance mass M_X are set. The limits are also interpreted as mass limits for leptophobic topcolor particles.

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single top
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14)
System8 : a method to determine background content and selection
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efficiencies on data

Name: Benoit Clement
Institution: IRes IN2P3/CNRS Strasbourg, France
Email: Benoit.Clement@ires.in2p3.fr
Category: F6 (Heavy Quarks)
Category: Experimental

The System8 method aims at computing selection efficiencies as well as signal and background fractions with almost no input from Monte-Carlo simulations. By appplying several, independant, cuts to the data one can write and solve a system of 8 equations where the unknowns are the selection efficiencies on signal and background. Its application on the context of the single top search in the D0 experiment at FNAL will be presented. Two separate cases will be exposed: the determination of the efficiency of b jets tagging algorithms and the estimation of QCD and W+jet backgrounds in the analysis data sample. It will also be shown how System8 may be used to extract the distributions of sensitive variables. Systematics uncertainties due to the various approximations made will also be discussed.

15)
Search for Single Top Quark Production in the muon+jets channel
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Name: Thomas Gadfort
Institution: University of Washington
Email: tgadfort@u.washington.edu
Category: F6 (Heavy Quarks) or F3 (Electroweak Interactions)
Category: Experimental

We present preliminary results from the search for single top quark production at the D0 detector at Fermilab's Tevatron Collider. These results use Run 2 data for the muon+jets channel. A discovery of single top quark production via the weak interaction will constrain the V_{tb} matrix element and thus place a limit on CKM unitarity. This talk will cover the analysis method used to isolate single top quark events at D0, as well as an update on our current cross-section limit in this channel.

16)
Electroweak Production of Top the quark in the Electron Channel
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Name: Shabnam Jabeen
Institution: Kansas University
Email: jabeen@fnal.gov
Category: F6 (Heavy Quarks) or F3 (Electroweak Interactions)
Category: Experimental

The electroweak production of the top quark (single top) has yet to be observed. The single top cross section is sensitive to new physics and the CKM matrix parameter V_{tb}. The D0 collaboration has collected $200\;\rm pb^{-1}$ of $p\bar p$ collision data at $\sqrt{s}=1.96 TeV$ in the current Tevatron Run at the Fermi National Accelerator Laboratory. The preliminary results of a search for single top production in the top decay channel $t \rightarrow Wb \rightarrow e + \nu$ + jet are presented.

17)
Search for Single Top Quark Events in the Electron+Jets Channel with an
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Identified b-Jet

Name: Philip Perea
Institution: University of California, Riverside
Email: perea@fnal.gov
Category: F6 (Heavy Quarks) or F3 (Electroweak Interactions)
Category: Experimental

The {D\O} collaboration is undertaking a search for top quarks produced together with a bottom quark. The search uses Run~II data from the Tevatron proton-antiproton collider at Fermilab, at a center-of-mass energy of 1.96~TeV. This talk focuses on the background measurement methods, and on techniques for identifying b-quarks, a powerful method for effective signal-background separation.