CDF Top Dilepton Analysis

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Top Dilepton Analysis

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		Without $\not{E}_T$ and two-jet cuts	Without two-jet cut	All cuts
$e\mu$	WW	1.1	0.74	0.10±0.04
	$Z \to \tau\tau$	3.7	0.22	0.07±0.02
	$b\bar{b}$	1.2	0.10	0.04±0.03
	Fake	1.2	0.19	0.03±0.03
	Total background	7.2	1.25	0.24±0.06
	CDF data	5	2	2
$ee, \mu\mu$	WW	0.6	0.43	0.06±0.02
	$Z \to \tau\tau$	3.0	0.20	0.06±0.02
	$b\bar{b}$	1.6	0.12	0.05±0.03
	Fake	1.7	0.25	0.04±0.03
	Drell-Yan	113	0.28	0.15±0.10
	Total background	120	1.28	0.31±0.11
	CDF data	120	0	0

Table 28: Number of background events expected 21.4 pb^{-1} and the number of events observed in the data.

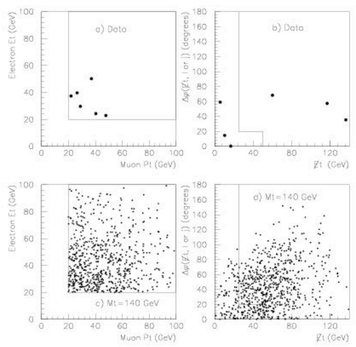

Figure : 11. Data versus Monte Carlo: $e\mu$ events.
a) $E_T(e)$ vs $P_T(\mu)$ (CDF 1992-93 data)
b) $\mathrm{Min}(\Delta\phi(\not{E}_T, \ell)\ ,\Delta\phi(\not{E}_T, j))$ vs Missing E_T (CDF 1992-93 data)
There are two $e\mu$ events in the signal region. Plots a) and b) both include the Pseudo-E Mu event.
c) $E_T(e)$ vs $P_T(\mu)$ (Monte Carlo $t\bar{t}$ events with $M_{top} = 140$ GeV/c^2).
d) $\mathrm{Min}(\Delta\phi(\not{E}_T, \ell)\ ,\Delta\phi(\not{E}_T, j))$ vs Missing E_T (Monte Carlo $t\bar{t}$ events with $M_{top} = 140$ GeV/c^2).

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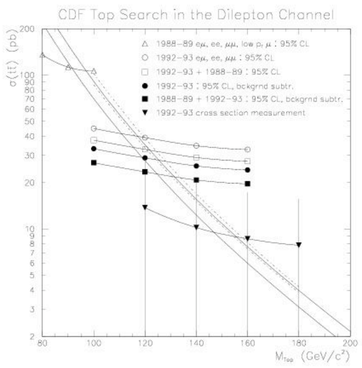

Figure : 12. $\sigma_{t\bar{t}}$ as a function of M_{top}; two theoretical calculations are shown, as well as an experimental measurement and several experimental upper limits; see text for a full description

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CDF/ANAL/TOP/CDFR/2851
Version 2.2
February 14, 1995

Top Dilepton Analysis - Run 1

Dilepton Group

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Abstract

This note summarizes the dilepton analysis for ~ 67 pb^{-1} of the combined Run 1A and Run 1B data. This document should be self contained, however, for details the readers are referer to the original notes. This is a working document and represents the status of the analysis at any given time.

The authors list is subject to change as more work gets added

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		Without $\not{E}_T$ and two-jet cuts	Without two-jet cut	Two Jets $E_T > 10$ GeV
$e\mu$	$Z \to \tau\tau$	17.9	1.03	0.31±0.07
	WW	4.5	3.90	0.19±0.09
	Fake	2.7	0.62	0.16±0.05
	$b\bar{b}$	0.7	0.04	0.01±0.01
	Total background	25.8	5.6	0.67±0.12
	Top 175	6.3	5.5	4.1
	CDF data	41	15	6
$ee, \mu\mu$	Drell-Yan	577	2.7	0.64±0.35
	$Z \to \tau\tau$	14.6	0.82	0.25±0.07
	Fake	3.93	0.72	0.19±0.10
	WW	3.3	2.19	0.12±0.04
	$b\bar{b}$	0.9	0.06	0.02±0.01
	Total background	599.7	6.5	1.22±0.38
	Top 175	4.6	4.0	2.9
	CDF data	680	13	2

Table 8: Number of background events expected in 100 pb^{-1} , expected number of top events for 175 GeV top and number of events observed in the data. (The $\mu\mu\gamma$ + 1jet event was removed from this table, see Sec.7)

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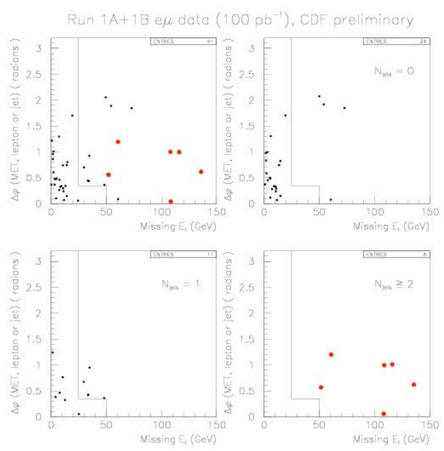

Figure 9: Minimum angle between $\not{E}_T$ and leptons or jet vs. $\not{E}_T$ for $e\mu$ events

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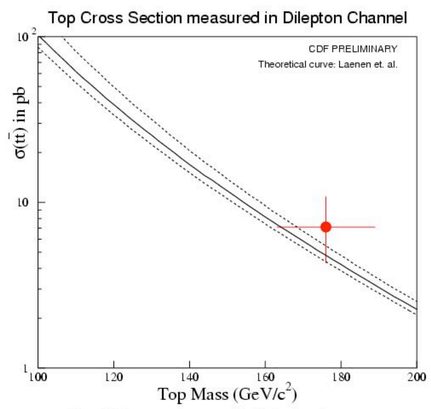

Figure 12: top cross section measured in dilepton channel

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