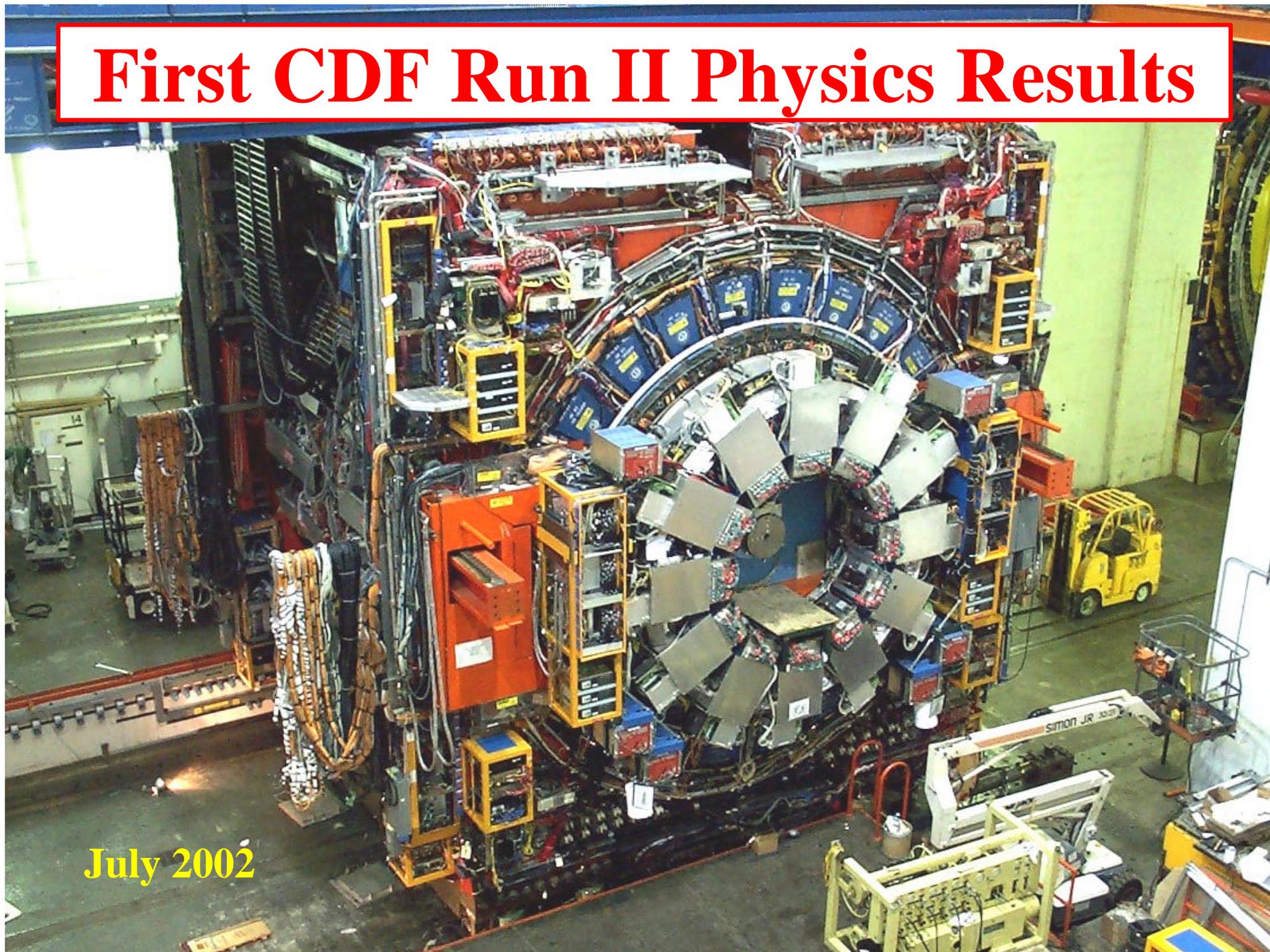


First CDF Run II Physics Results

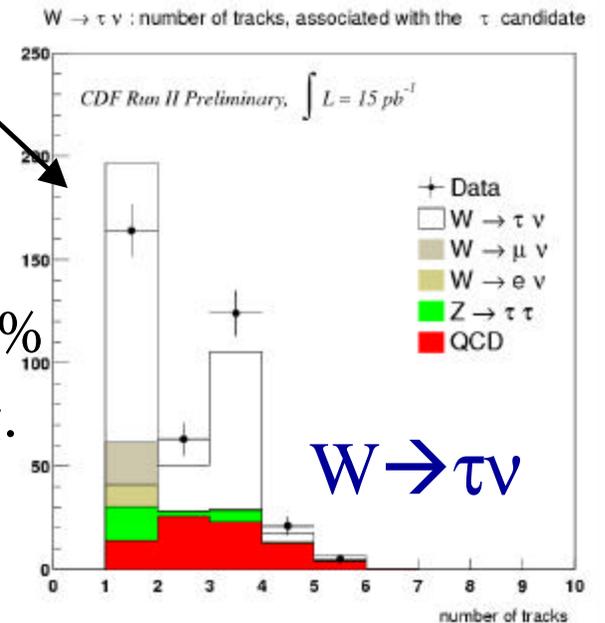


July 2002



CDF-II detector is recording publication-quality data

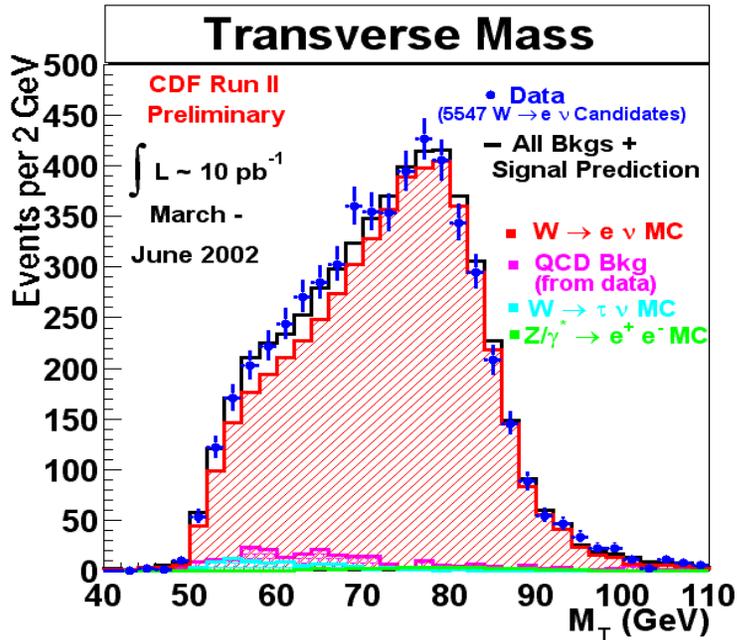
- Stable physics running established in early 2002
 - Complete Physics Trigger Table
 - ◆ ~140 triggers (e, μ , τ , ν , γ , jet, displaced track, b jet, ...)
- 23.5/pb recorded January-June 2002
- COT tracking performance excellent
 - $\epsilon = 99 \pm 1\%$ (L3/offline reconstruction)
- High Trigger efficiency
 - $\epsilon \sim 100\%$ (L1 calorimeter trigger)
 - $\epsilon = 96.1 \pm 0.1\%$ (L1 track trigger)
- Efficient Shift Operation – July record 98.6%
- Offline Farms keep up with data processing.



CDF Results July 2002

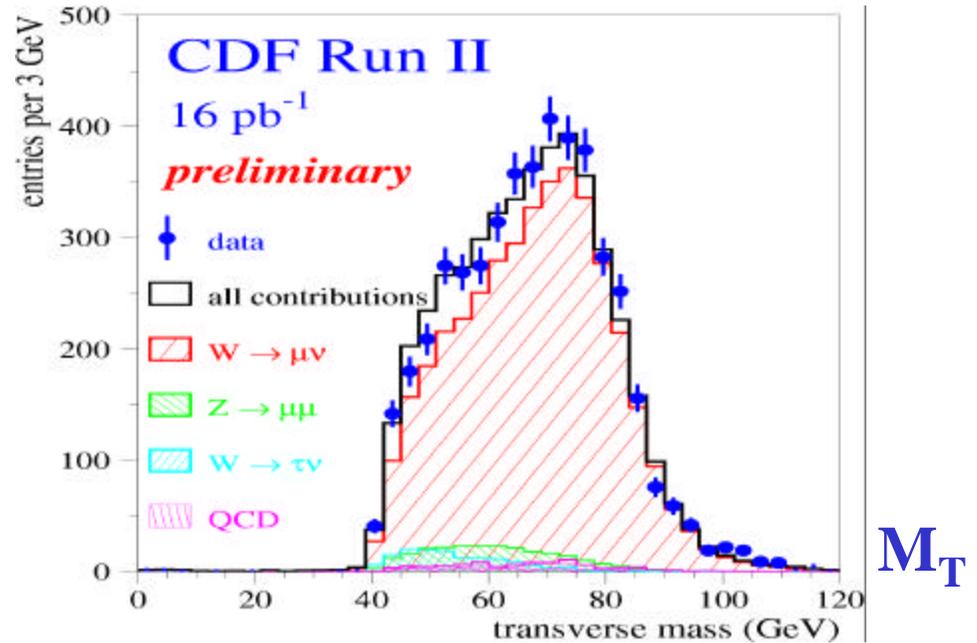


Measurements of $\sigma B(W \rightarrow e\nu, \mu\nu)$



5547 candidates in 10 pb^{-1}

$$\sigma_W \cdot \text{BR}(W \rightarrow e\nu) \text{ (nb)} = 2.60 \pm 0.07_{\text{stat}} \pm 0.11_{\text{syst}} \pm 0.26_{\text{lum}}$$



4561 candidates in 16 pb^{-1}

$$\sigma \cdot B(W \rightarrow \mu\nu) = 2.70 \pm 0.04_{\text{stat}} \pm 0.19_{\text{syst}} \pm 0.27_{\text{lum}}$$

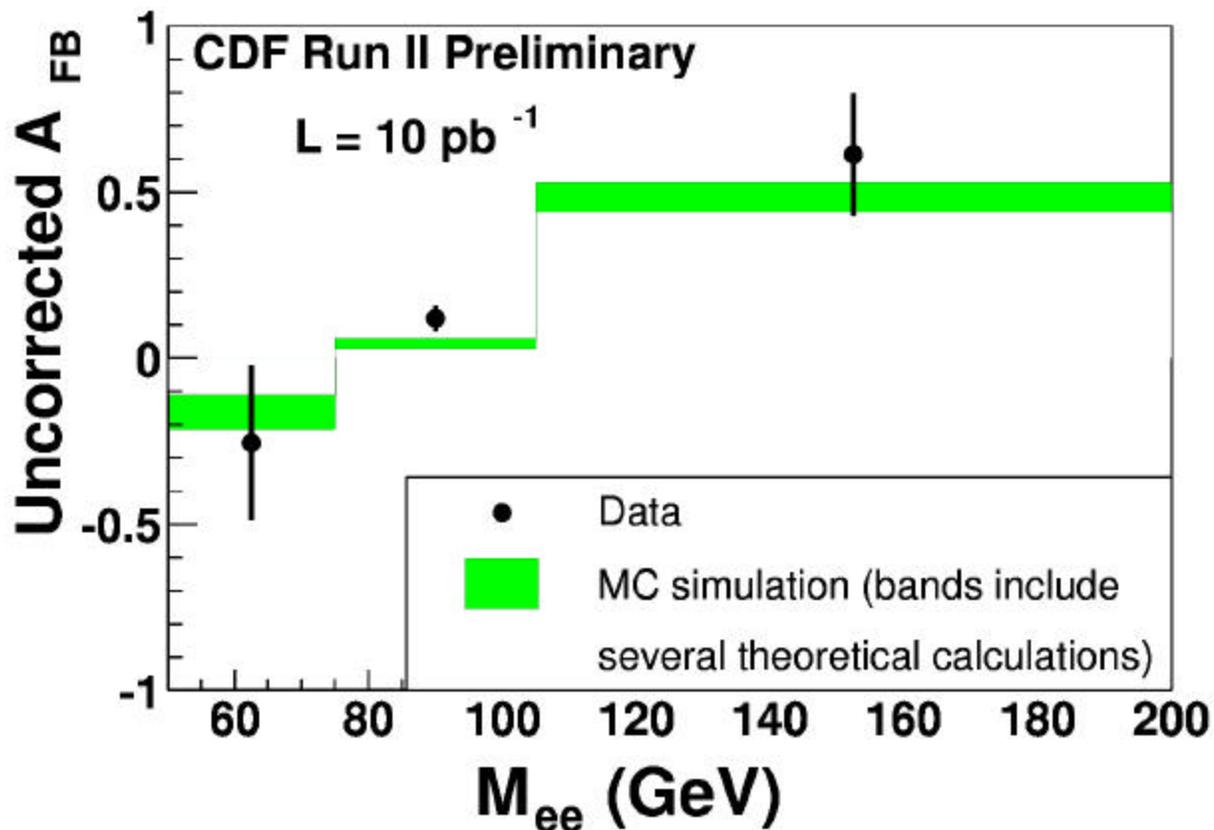
Run 1 scaled to 1.96 TeV: $2.72 \pm 0.02_{\text{stat}} \pm 0.09_{\text{syst}} \pm 0.10_{\text{lum}}$

Toward M_W and M_{top} for M_{Higgs} constraints



Measurement of A_{FB} using $Z \rightarrow ee$

~800 candidates in 10 pb^{-1}

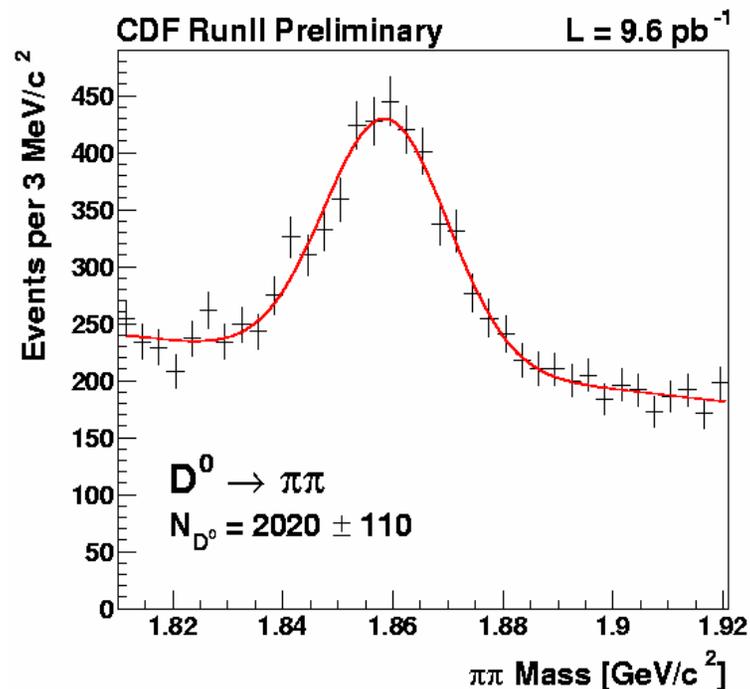
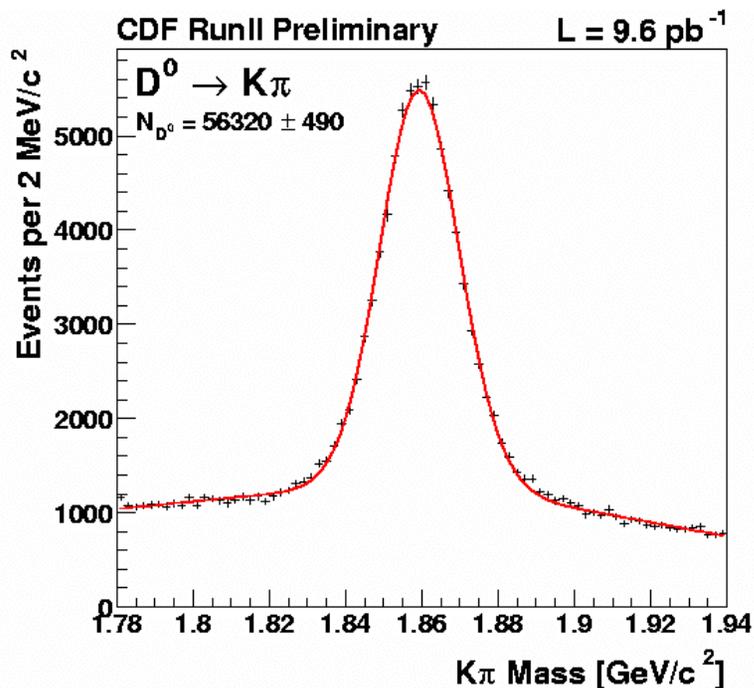


A_{FB} is sensitive to extensions beyond the Standard Model that include extra Z bosons.



SVT selects huge charm signals!

Millions of reconstructed charm in Run 2a (2/fb)

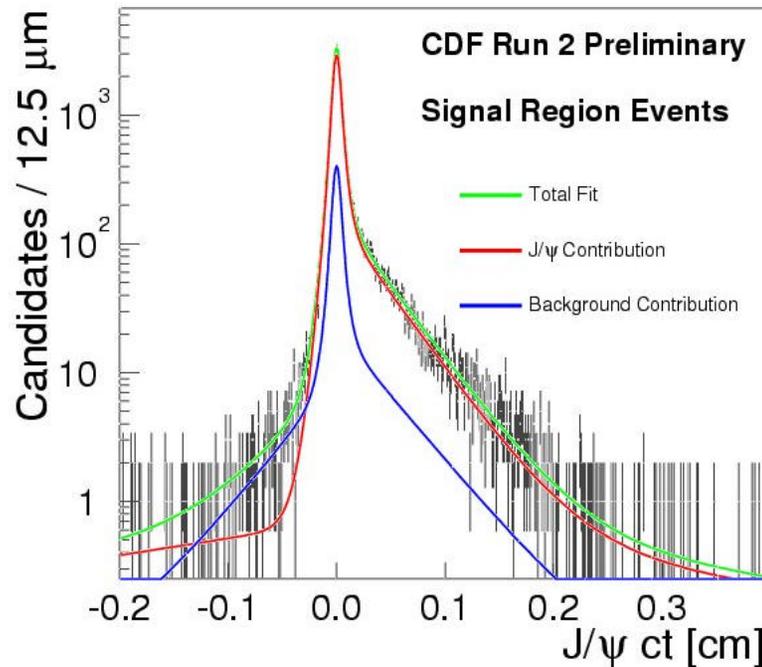


- $\Gamma(D \rightarrow KK)/\Gamma(D \rightarrow K\pi) = (11.17 \pm 0.48 \pm 0.98)\%$ (PDG: 10.83 ± 0.27)
- $\Gamma(D \rightarrow \pi\pi)/\Gamma(D \rightarrow K\pi) = (3.37 \pm 0.20 \pm 0.16)\%$ (PDG: 3.76 ± 0.17)

Already comparable!



Toward B_s mixing using $B_s \rightarrow D_s \pi$



❖ Inclusive B lifetime with J/ψ's

$$c\tau = 458 \pm 10_{\text{stat.}} \pm 11_{\text{syst.}} \mu\text{m} \quad (\text{PDG: } 469 \pm 4 \mu\text{m})$$

❖ Exclusive $B^+ \rightarrow J/\psi K^+$ lifetime

$$c\tau = 446 \pm 43_{\text{stat.}} \pm 13_{\text{syst.}} \mu\text{m} \quad (\text{PDG: } 502 \pm 5 \mu\text{m})$$

