Results from D0

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QCD: Inclusive di-jet mass cross-section, 3-jet mass cross-section
Ratio 3-jet/2-jet, exclusive diffractive dijet production

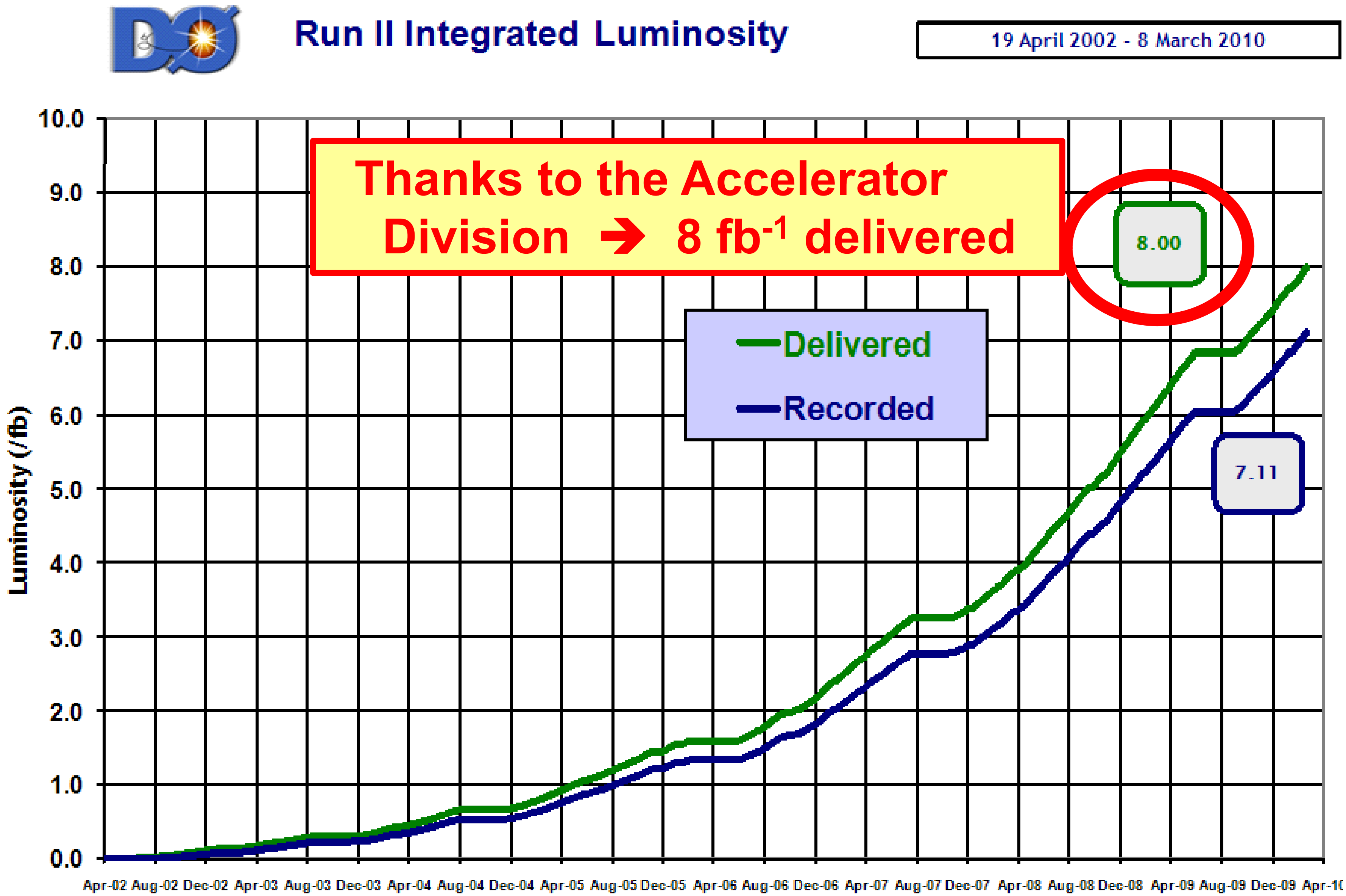
Top: Dilepton, All jet, differential cross-sections, Single Top, Top Width

Electroweak: Tevatron combination on W Width

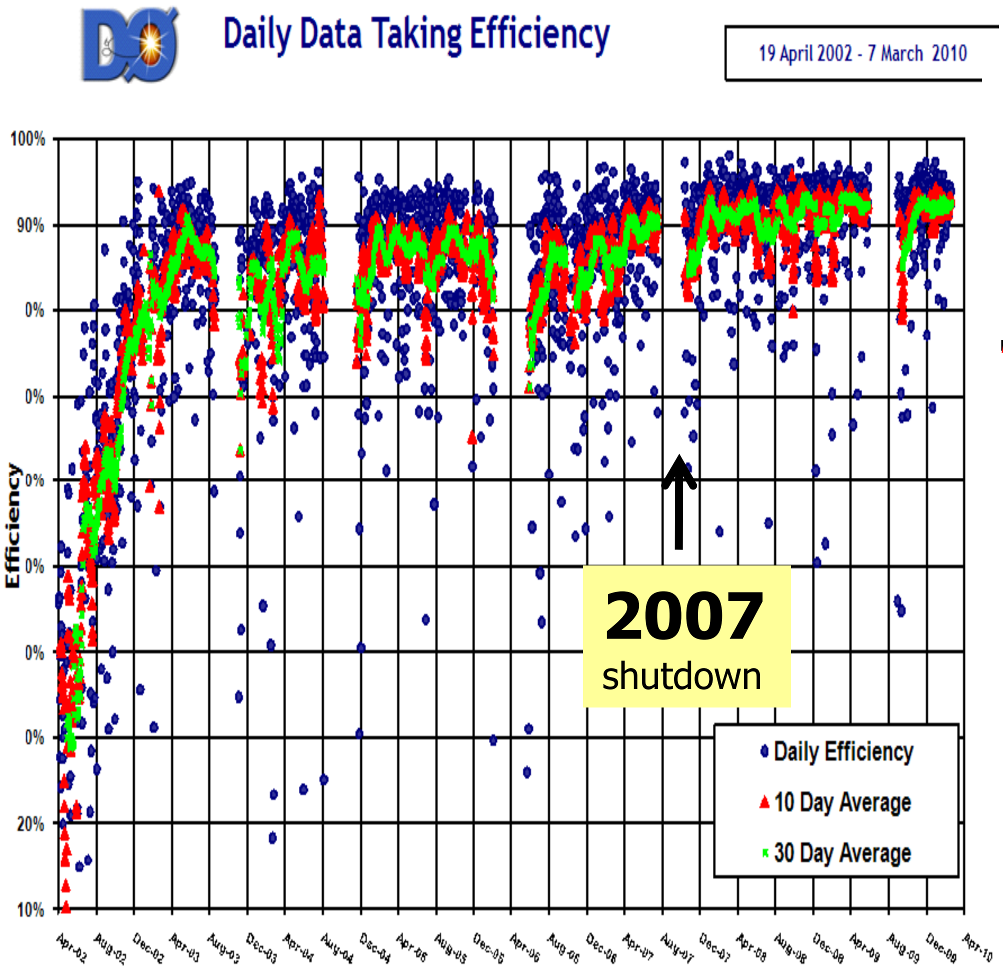
New Phenomena: Searches for W′, Randall-Sundrum Gravitons

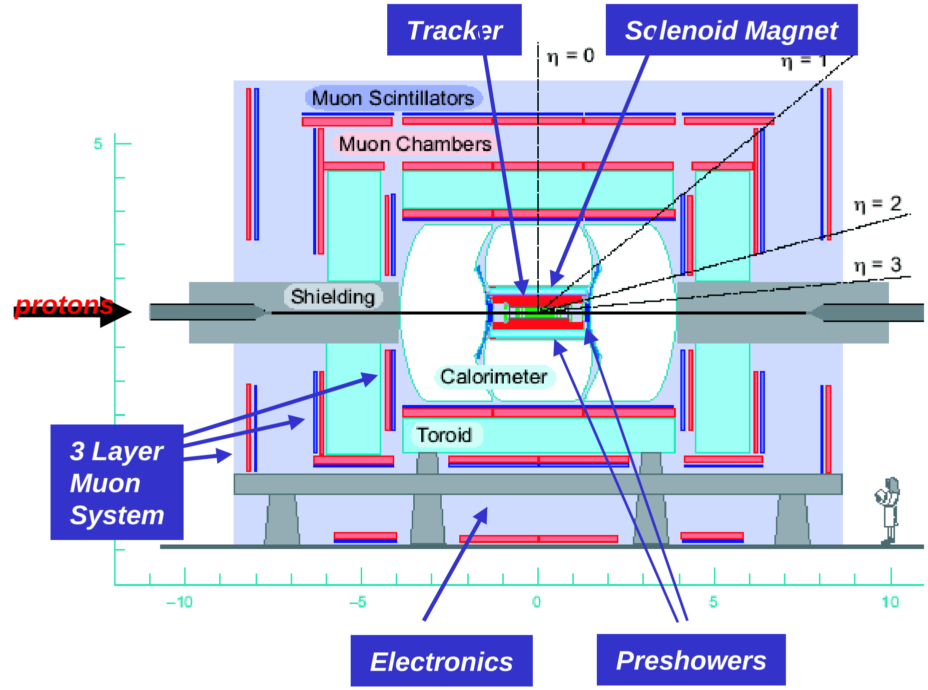
Higgs: $h \to b\tau\tau$, Low mass, $ZH \to \nu\nu bb$, Tevatron $H \to WW/4^{th}$ generation

Tevatron Performance



Data taking / Detector





Rapidity coverage	(for analysis)
Track	2.5 (2.5)
Cal (EM,HAD)	4.0 (2.5)
Muon	2.0 (2.0)

in $\eta = -\ln(\tan\theta/2)$

Since 2007 we keep recording at more than 90% efficiency!

Up to 5.4 fb^{-1} of data analyzed in the new results presented here

QCD Physics: new results since LP'09

Jet Physics

- Inclusive dijet mass cross-section arXiv:1002.4594
- Inclusive 3-jet mass cross-section
- Ratio 3-jet/2-jet
- $\alpha_s(M_Z)$ arXiv:1002.4917

Covered in this talk

Recently covered in W&C seminar

Other QCD Results

- Diffraction: evidence for exclusive dijet production
- Photons: Measurement of Direct $\gamma\gamma$ Pair Production cros-section arXiv:1002.4917
- DP: Double parton interactions in γ+3 jets arXiv:0912.5104

Why measure the Dijet Mass cross section?

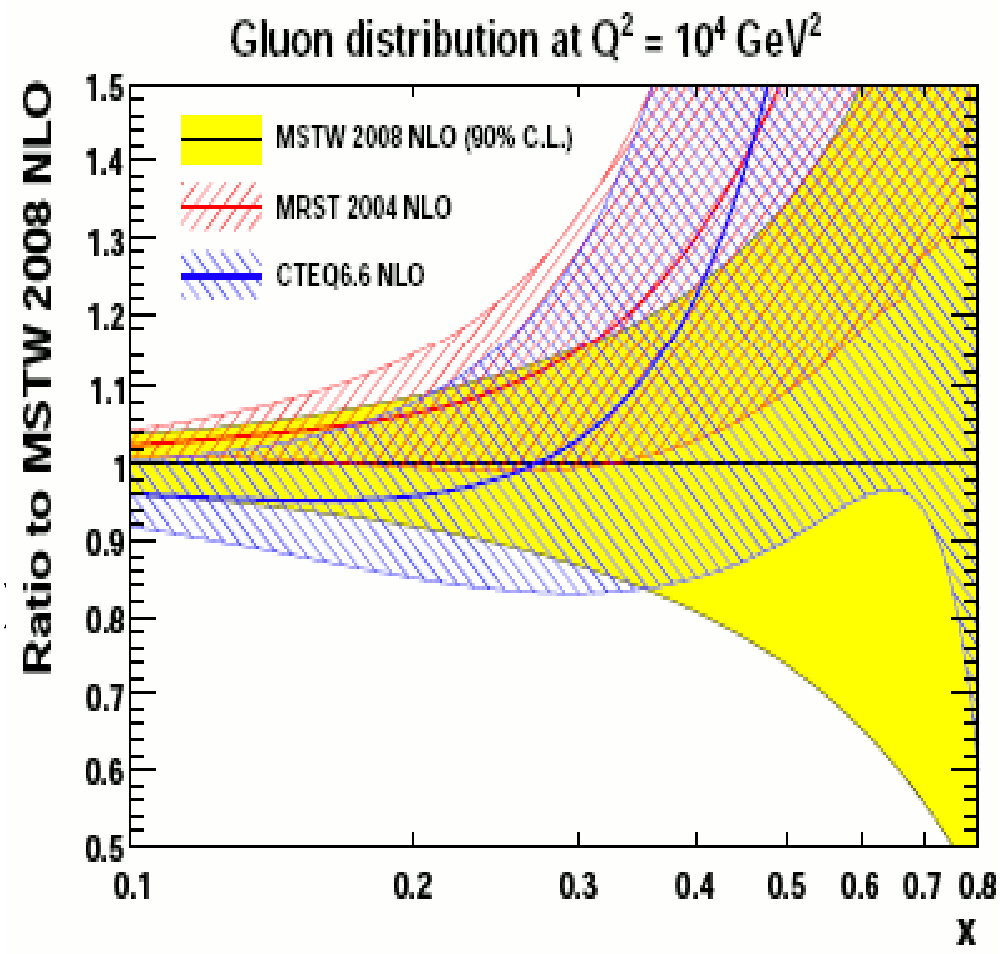
The dijet mass cross section can be used to test both QCD and New Physics

– **QCD**

Constrain PDFs
Test perturbative QCD
(at Next-to-Leading Order, NLO,
+ non-perturbative corrections)

– **Look for New Physics**

- Exotic particles
- Quark compositeness



Dijet Mass x-section: Analysis and Results

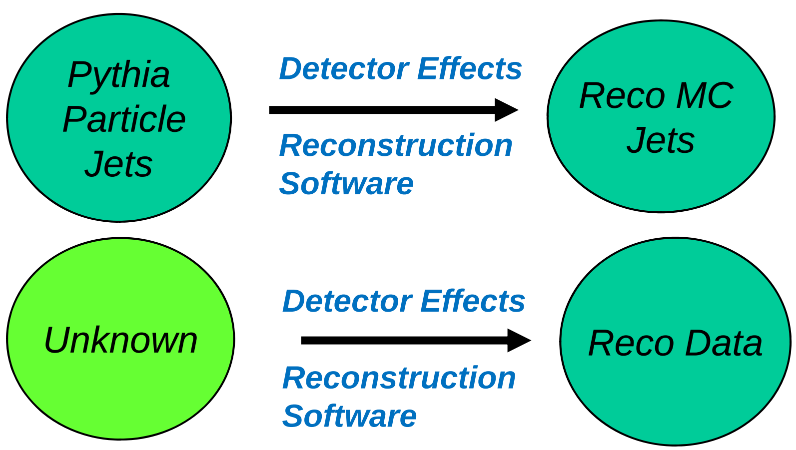
Events must have 2 or more jets

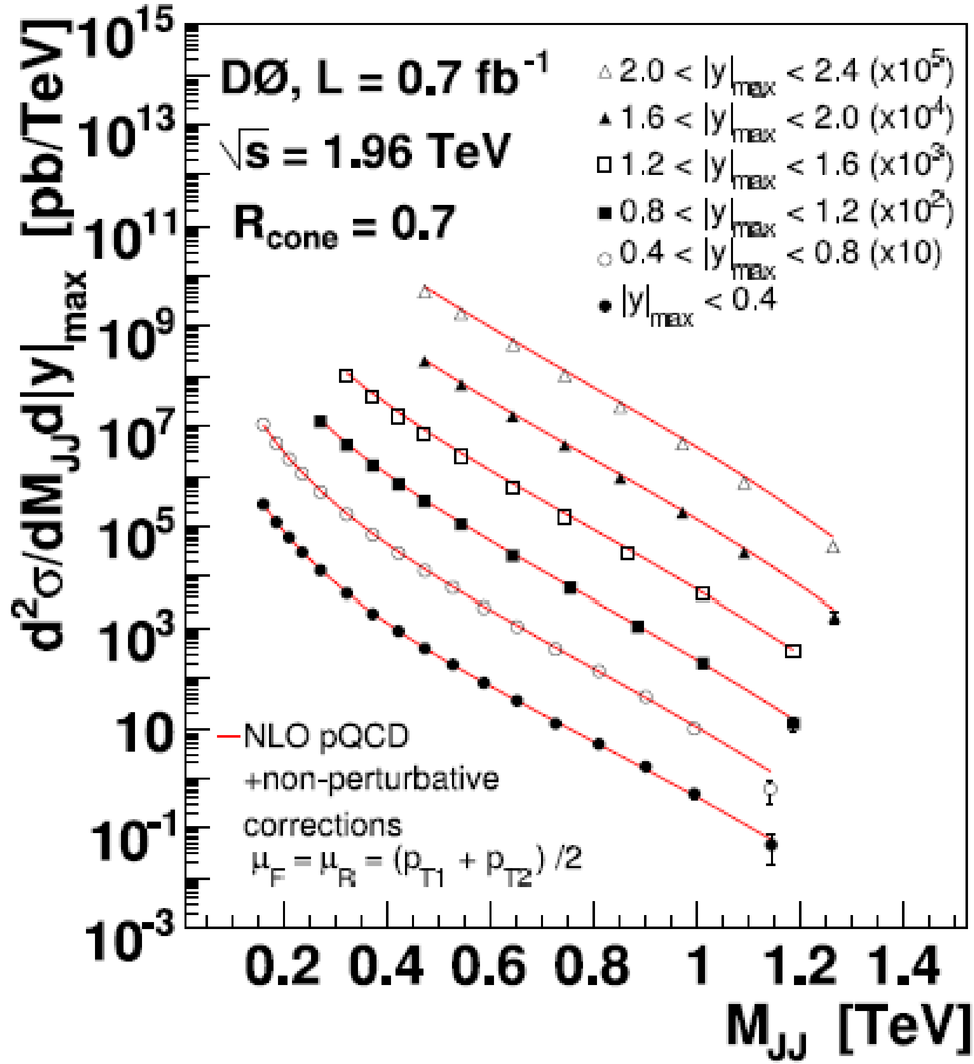
6 bins according to most forward jet

$|y_{max}| < 0.4$, $0.4 < |y_{max}| < 0.8$
$0.8 < |y_{max}| < 1.2$, $1.2 < |y_{max}| < 1.6$
$1.6 < |y_{max}| < 2.0$, $2.0 < |y_{max}| < 2.4$

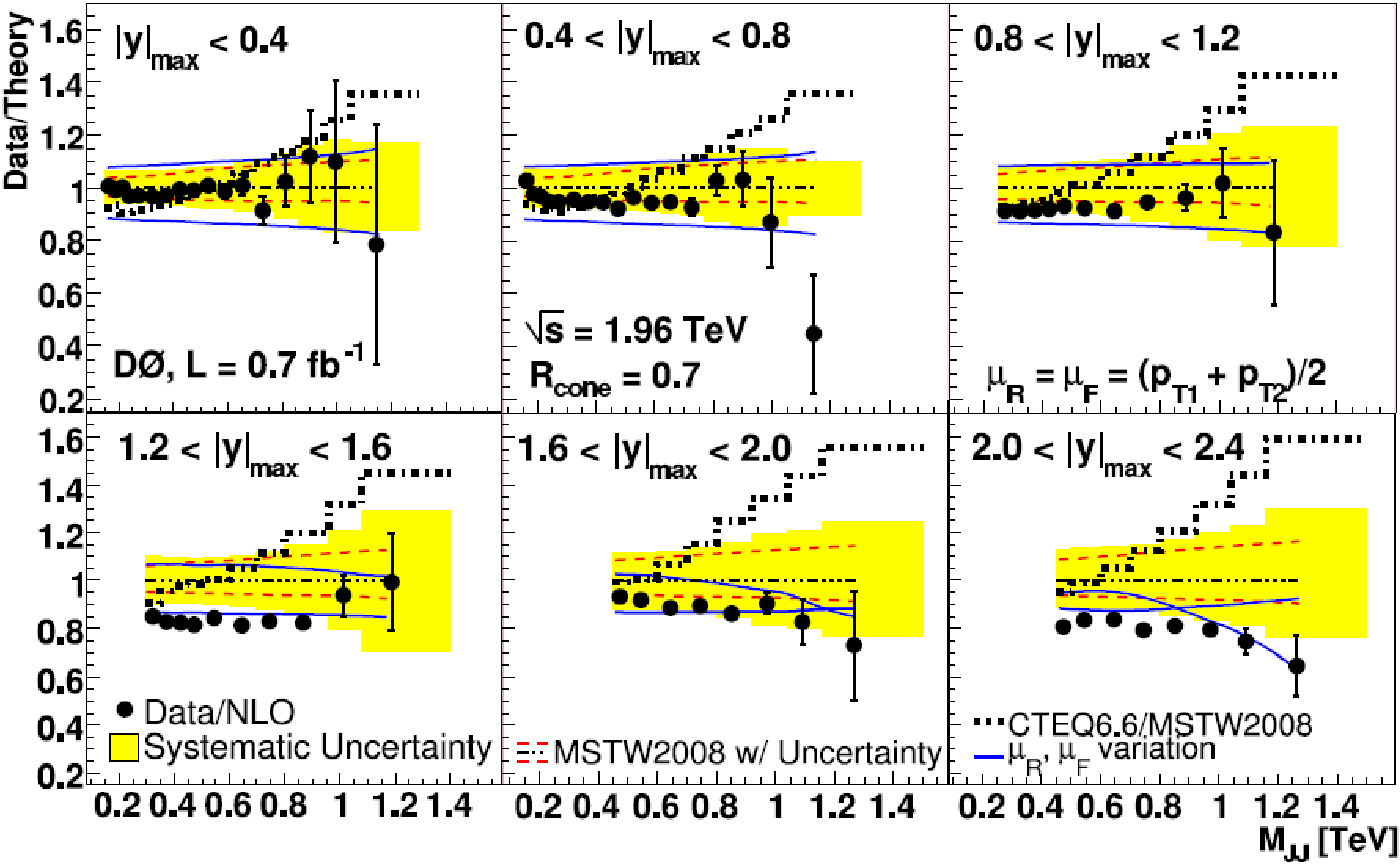
$$\frac{d^2\sigma}{dM_{JJ}dy_{\max}} = \sum_{i=1}^{N} \frac{1}{\varepsilon_{vtx}} \frac{C}{L \cdot \Delta M_{JJ} \cdot \Delta y_{\max}}$$

Correct data for efficiencies efficiency, mass rescaling, unsmear, compare to NLO at particle level!





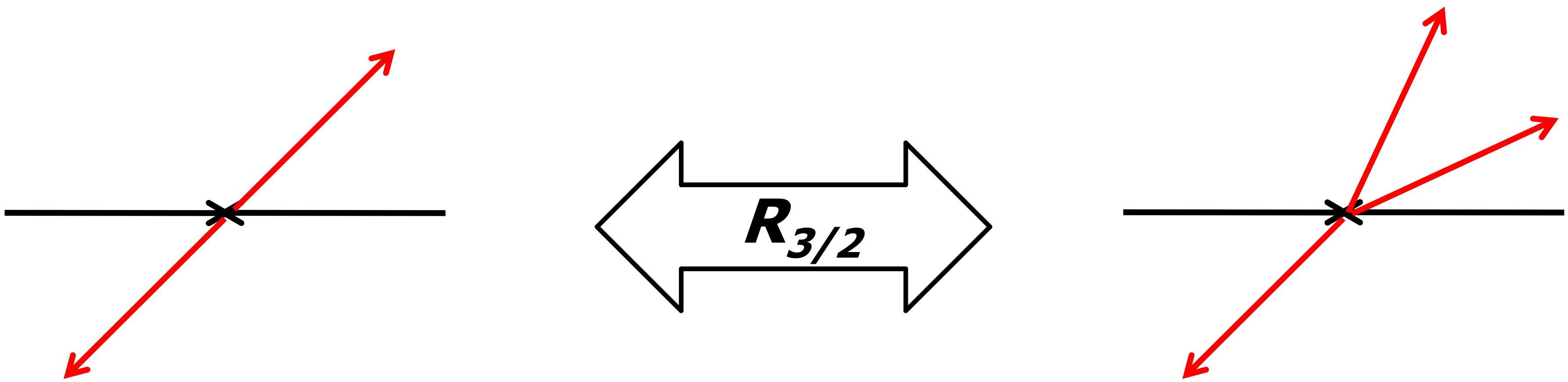
Dijet Mass x-section: Data/Theory comparison



Experimental Systematics dominated by jet energy calibration uncertainty

Dijet and 3-jet measurements

- **Allow further tests of pQCD**
  most events are dijets
  ➔ study the case where third jet is produced
  ➔ test QCD ME, PDFs, α_S



Dijet mass, χ, Δφ

Three-jet mass, angles, …

3-jet cross-section measurement

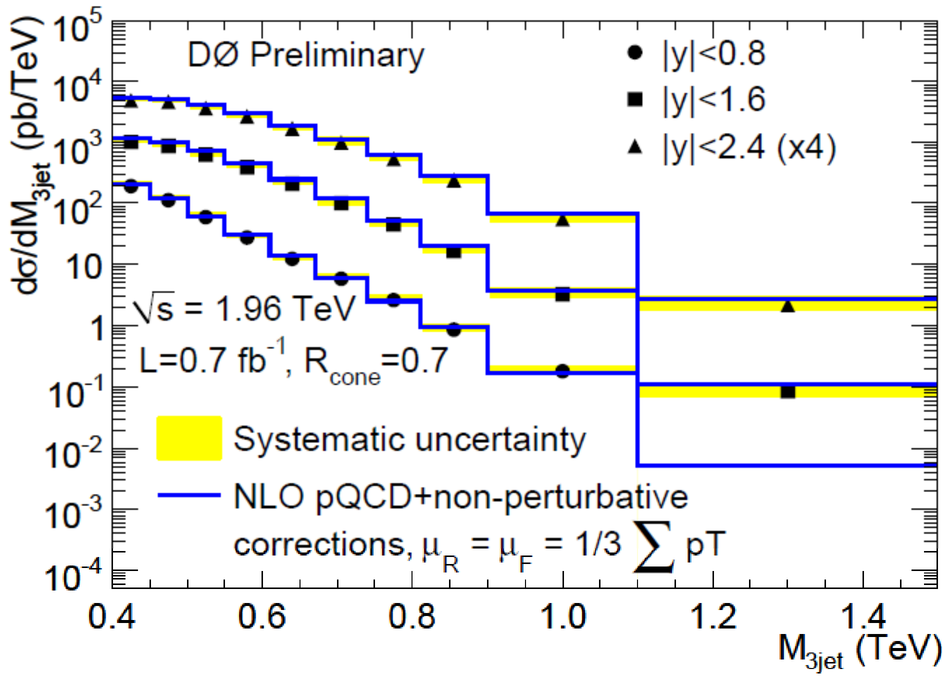
- Look at hard QCD only:
  ➔ high pT, high mass, At least 3 well separated (R=0.7) jets, (ΔR in eta-phi>1.4)

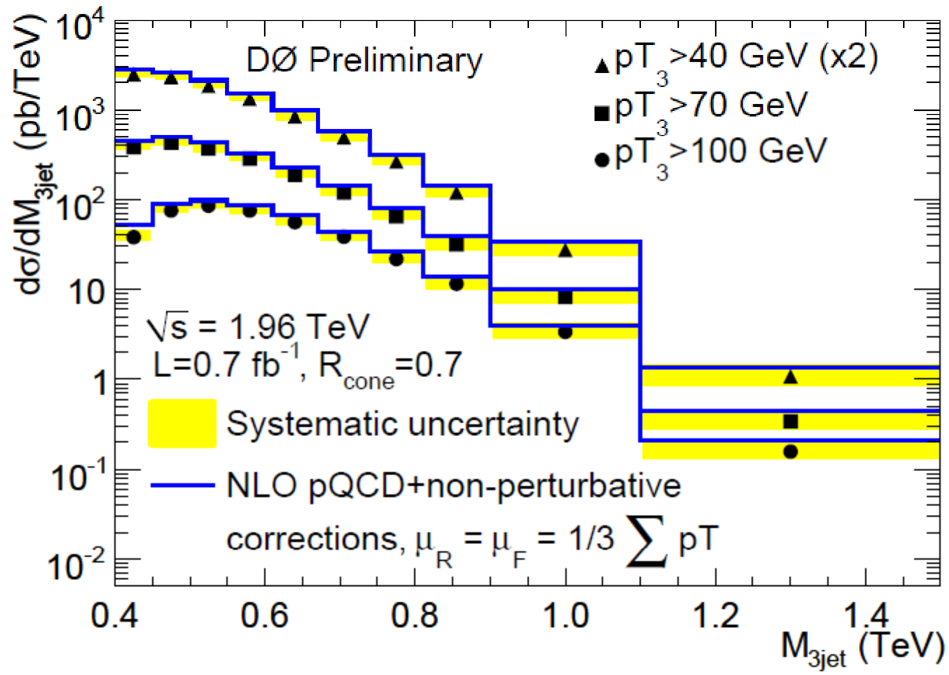
- $L=0.7\ fb^{-1}$
- leading jet p_T > 150GeV ➔ triggers >99% efficient

- Three-jet invariant mass (M_{3jet}) cross section in bins of jet rapidity, and in bins of jet transverse momenta
  - 3 rapidity bins $|y| < 0.8, 1.6, 2.4$ ($p_{T,3} > 40$ GeV)
  - 3 p_T bins $p_{T,3} > 40, 70, 100$ GeV ($|y|<2.4$)

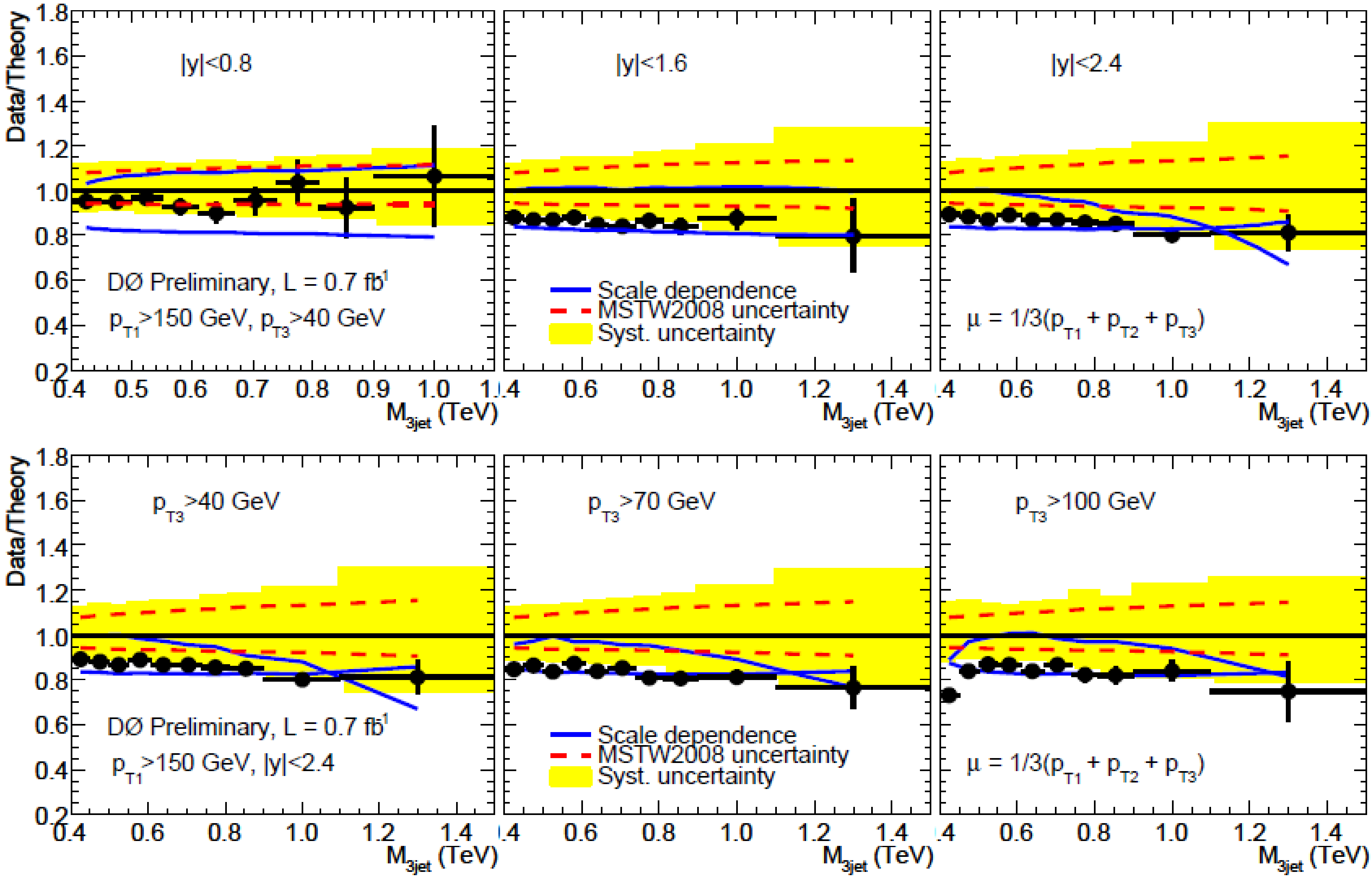
3-jet: Results, comparison to NLO predictions

NLOJET++ 4.1.2 (NLO for 3 jets)
MSTW2008 NLO PDF (which include D0 RunII inclusive jet results)
with renormalization/factorization scales μ= <pT>
+ nonperturbative corrections from Pythia (underlying event, hadronization)





3-jet-mass cross section: Data/Theory



Experimental Systematics dominated by jet energy calibration uncertainty

Ratio 3jet / 2jet cross-sections

test pQCD (and α_s) independent of PDFs

Conditional probability:

$$R_{3/2} = P(3^{rd} \text{ jet} \mid 2 \text{ jets}) = \sigma_{3\text{-}jet} / \sigma_{2\text{-}jet}$$

- probability to find a third jet in an inclusive dijet event
- Sensitive to α_s (3-jets: α_s^3 / 2-jets: α_s^2)
- (almost) independent of PDFs
  → small, residual PDF dependence because 2-jet and 3-jet cross sections have slightly different decomposition of partonic subprocesses

Ratio 3jet / 2jets analysis

Measure as function of two momentum scales:

- p_{Tmax} : leading jet pT – common scale for both $\sigma_{2\text{-}jet}$ and $\sigma_{3\text{-}jet}$
- p_{Tmin} : scale at which other jets are resolved

Sensitive to α_s at the scale p_{Tmax}

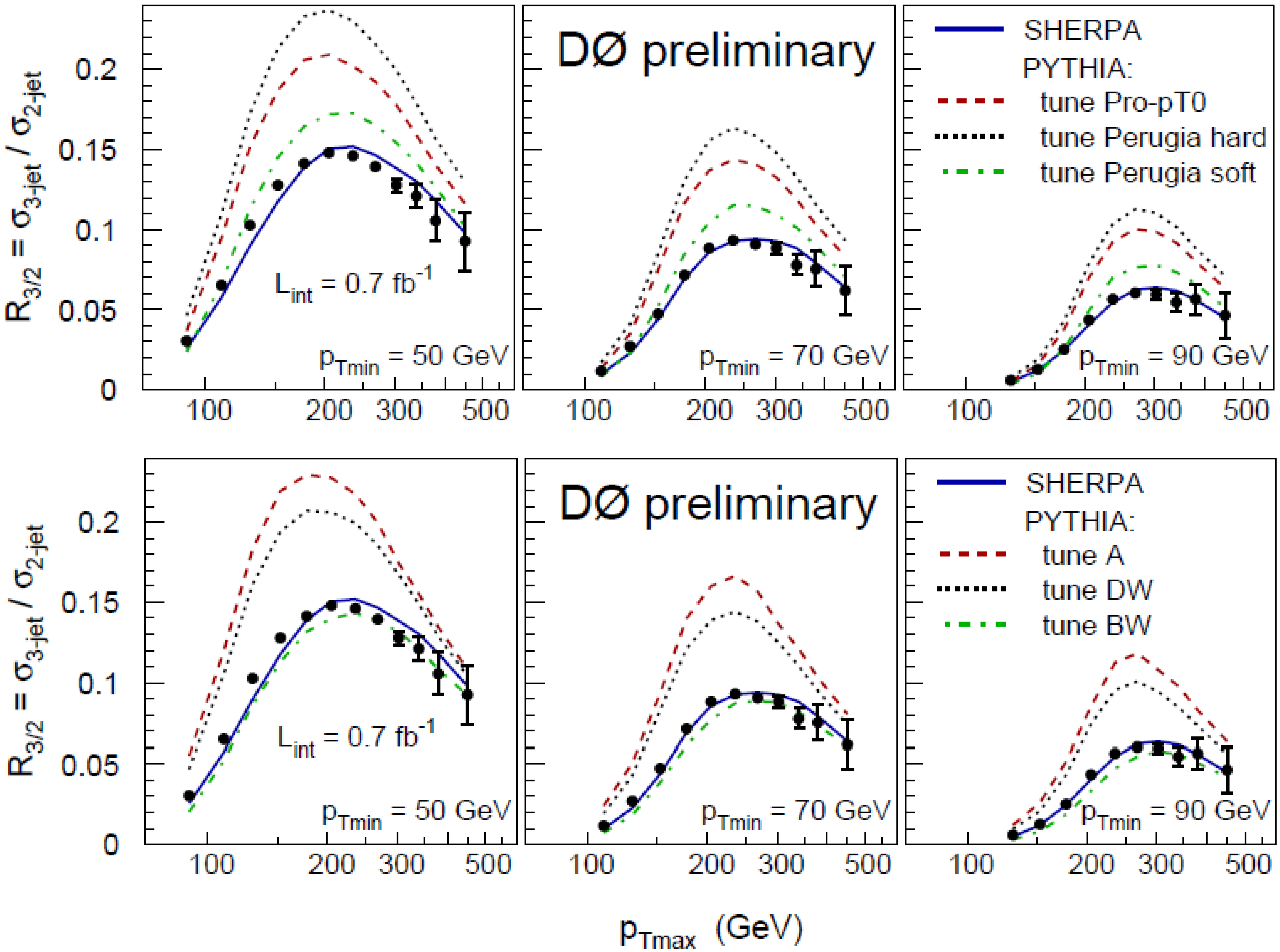
→ probe running of α_s in Tevatron energy regime → up to 500 GeV

Details:

- inclusive *n*-jet samples (*n*=3,2) with *n* (or more) jets above p_{Tmin}
- $|y|<2.4$ for all *n* leading p_T jets
- $\Delta R_{jet,jet} > 1.4$ (insensitive to overlapping jet cones)
- study p_{Tmax} dependence for different p_{Tmin} of 50, 70, 90 GeV

→ Measurement of $R_{3/2}(p_{Tmax}\,;\,p_{Tmin})$

Results R 3/2



→ SHERPA is quite close / PYTHIA tune BW still reasonable

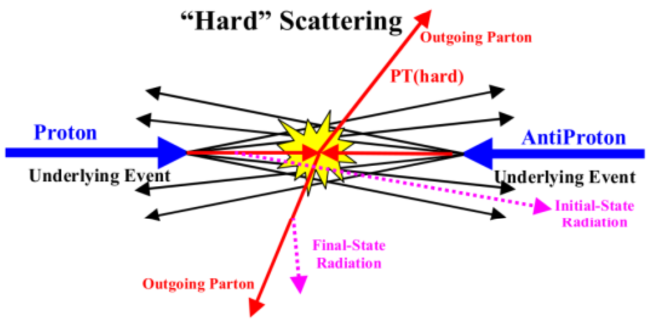
→ PYTHIA tunes A, DW much too high by 30% – 50%

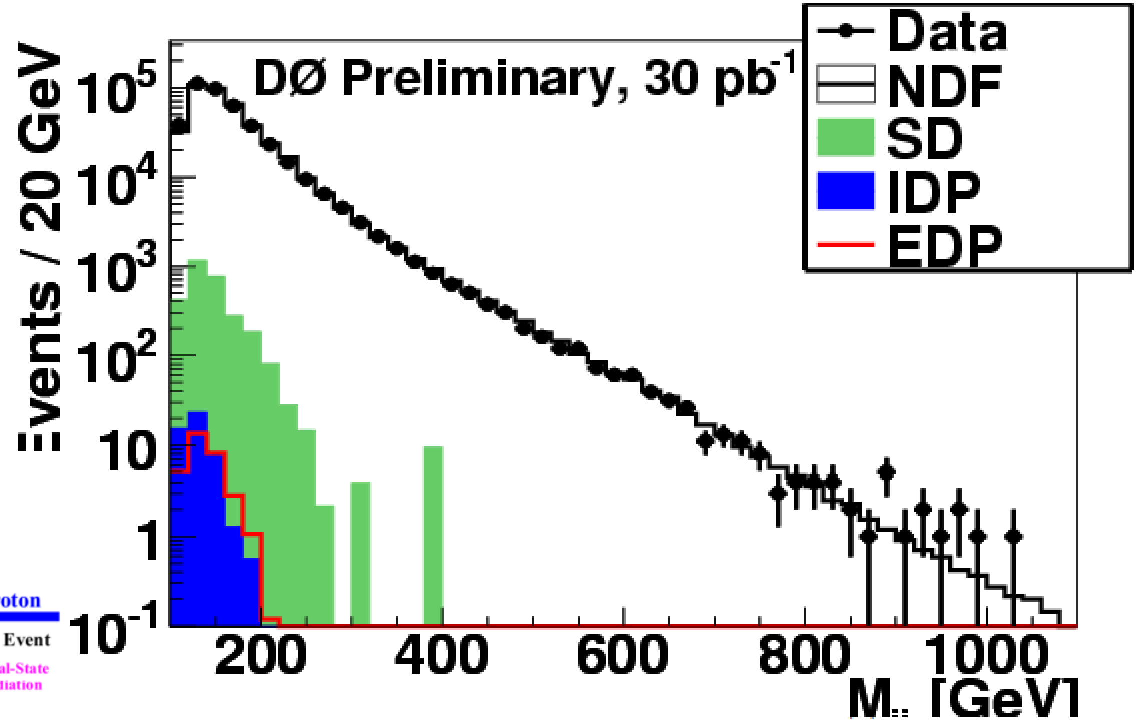
Exclusive Diffractive Dijet Production

Clean process, could be used to search for the Higgs at the LHC (cf last week M. Albrow's W&C)

Run IIa data, highly prescaled triggers
→ 30 pb^{-1} equivalent luminosity

2 central jets, $|y|<0.8$
$p_T>60$, 40 GeV, dijet mass > 100 GeV

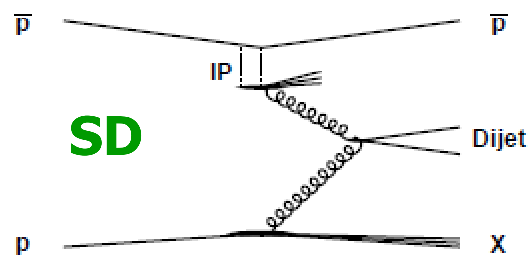


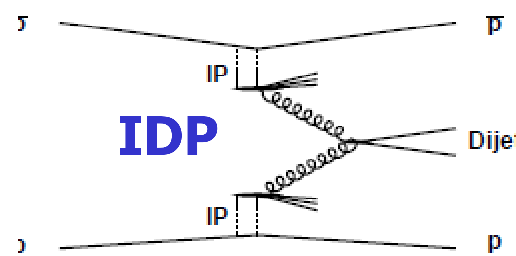


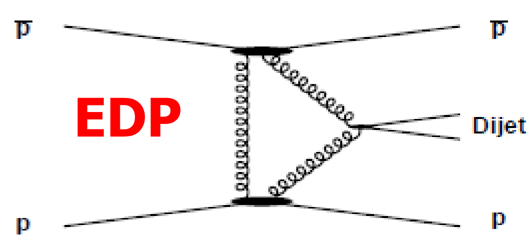
Goal: separate
Hard Non-Diffractive **(NDF)**/Pythia,
Single Diffractive **(SD)**/Pomwig
and Inclusive Diffractive **(IDP)**/FPMC

from

Exclusive Diffractive prod. **(EDP)**/FPMC







Exclusive Diffractive Dijet Production

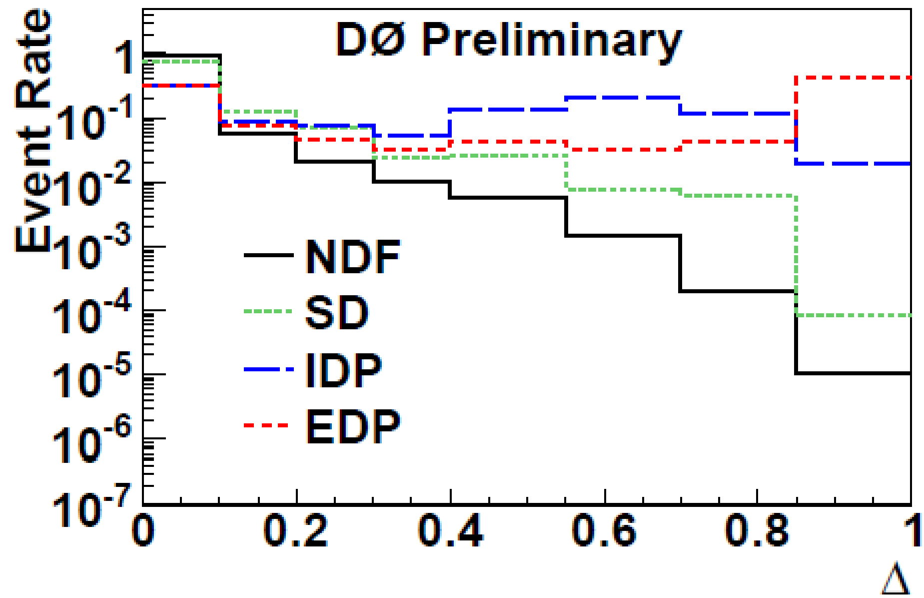
Very forward region |η|>3.0
➔ Separate NDF from SD, IDP, EDP

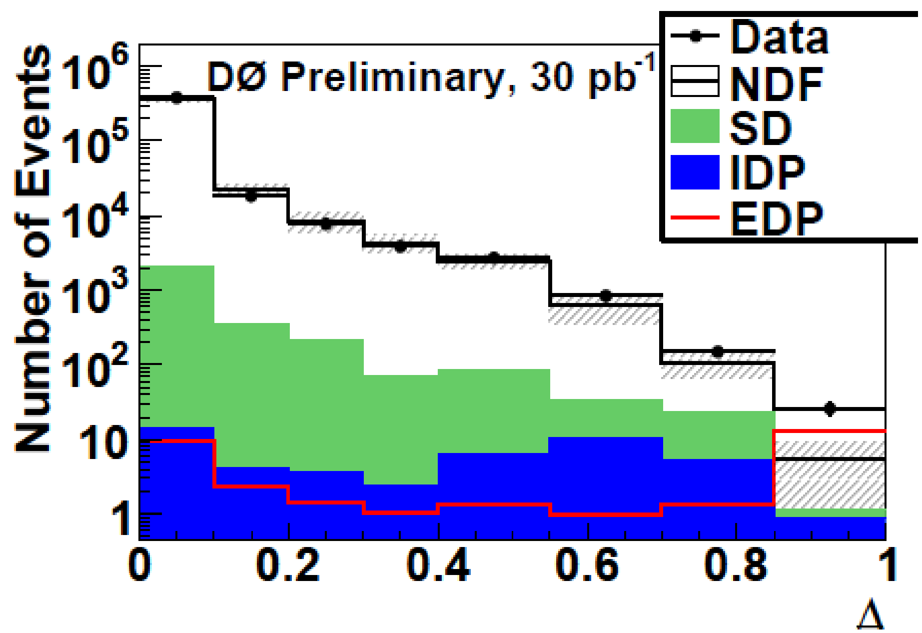
less forward region 2.0> |η|>3.0
➔Separate EDP from SD and IDP

➔Use Calo cell transverse energies to measure the size of the rapidity gap

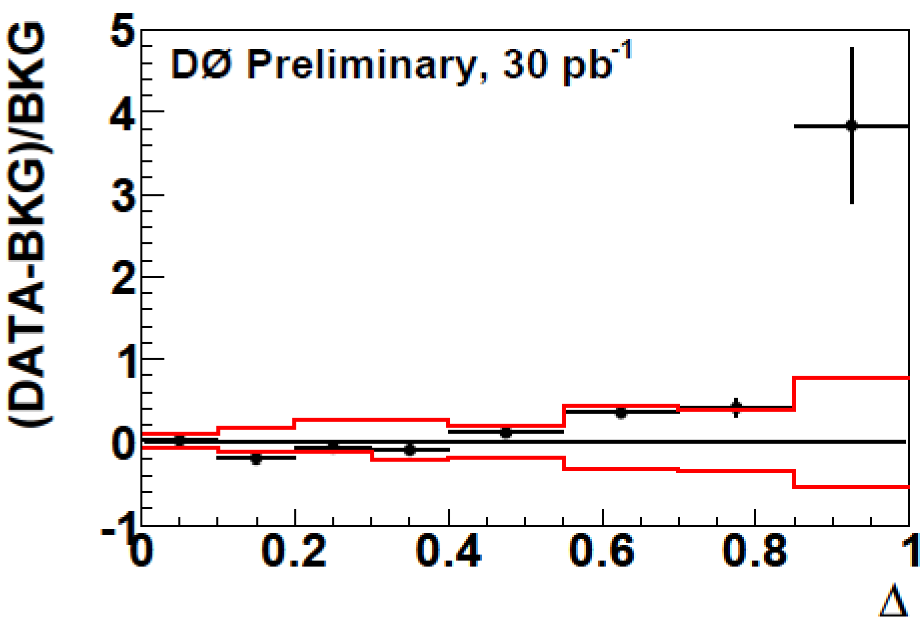
$$\Delta = \frac{1}{2}\exp(-\sum_{2.0<|\eta|\leq 3.0} E_T/\mathrm{GeV}) + \frac{1}{2}\exp(-\sum_{3.0<|\eta|<4.2} E_T/\mathrm{GeV})$$

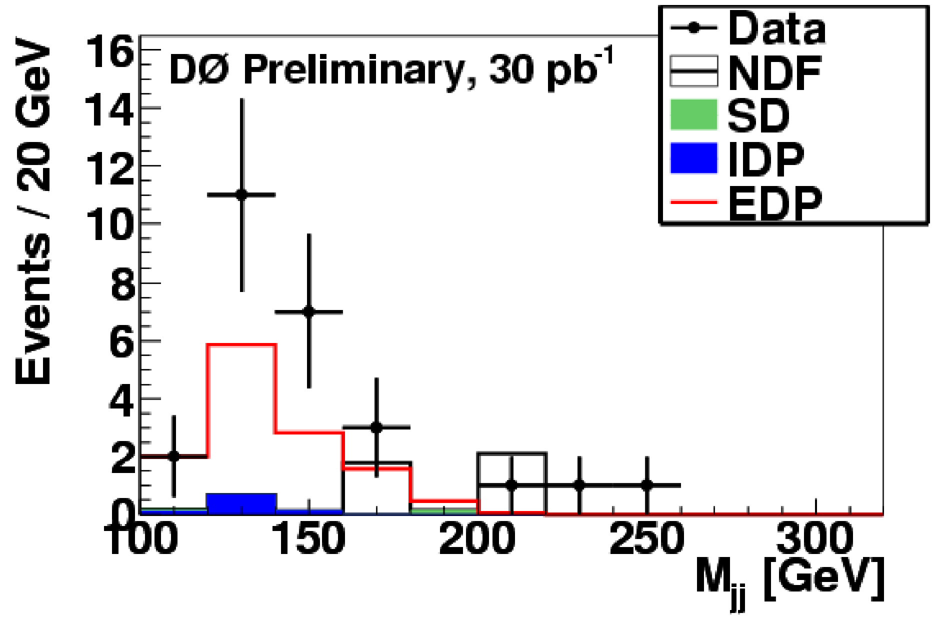
	NDF	IDP	SD	EDP	Data
All	: 410k±24k	48±24	2.9k±1.5k	31±2	**412k**
Δ>0.85:	4.2±1.6	0.9±0.4	0.2±0.1	12±0.9	**26**





Exclusive Diffractive Dijet Production





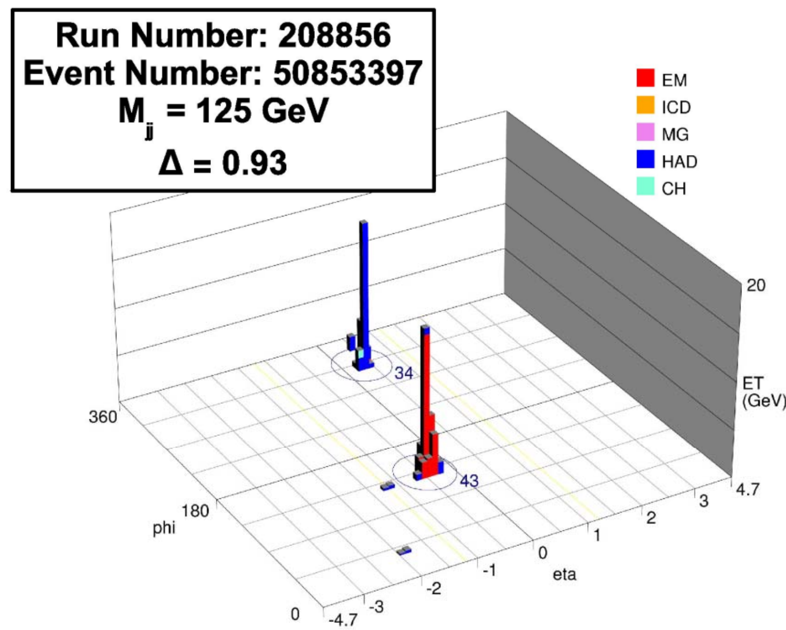
26 observed events at $\Delta > 0.85$

$5.4^{+4.2}_{-2.9}$ background expected

(12.0±0.9 Exclusive Diffr. Dijet Production exp.)

➔4.1 sigma evidence of observation of Exclusive Diffractive Dijet events !

(2.8 sigma expected sensitivity)



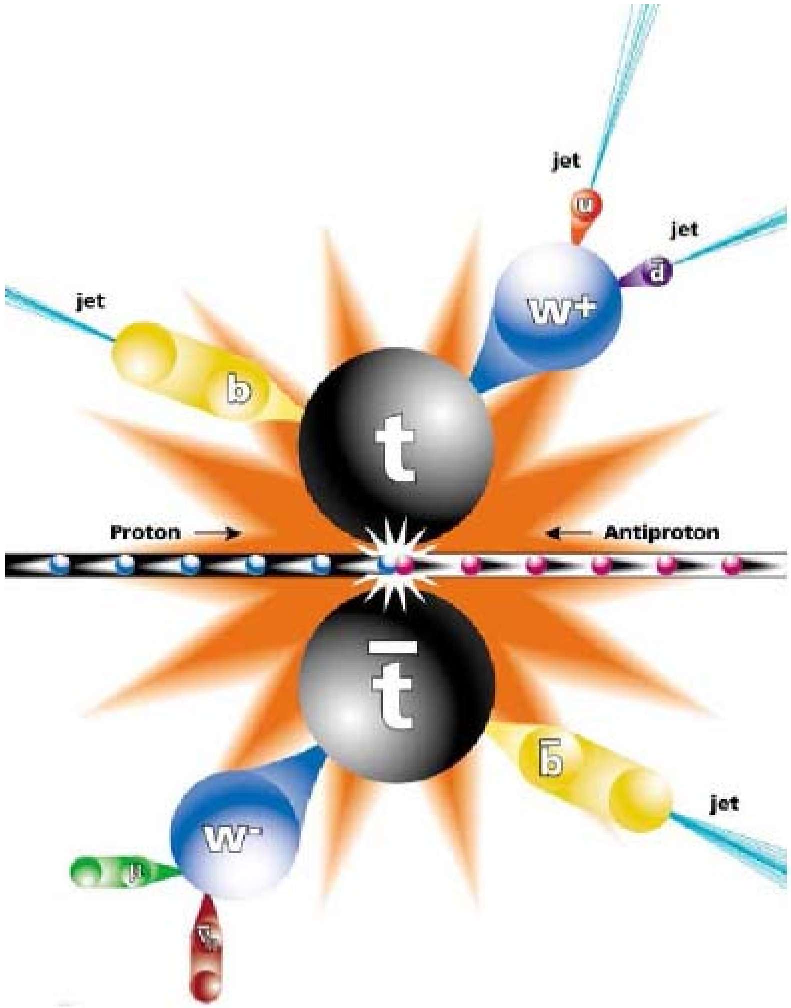
Top Physics – New Results

Top pair cross-section
- All-jets
- Dilepton

Differential ttbar cross-section
- lepton+jet as function of top p_T

Single top quark
– Cross-section in tau channel
– Evidence for t-channel

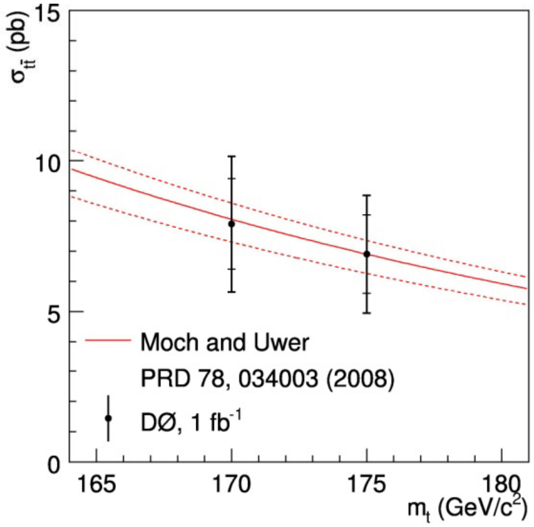
Top Width



Top results since LP 2009 (I)

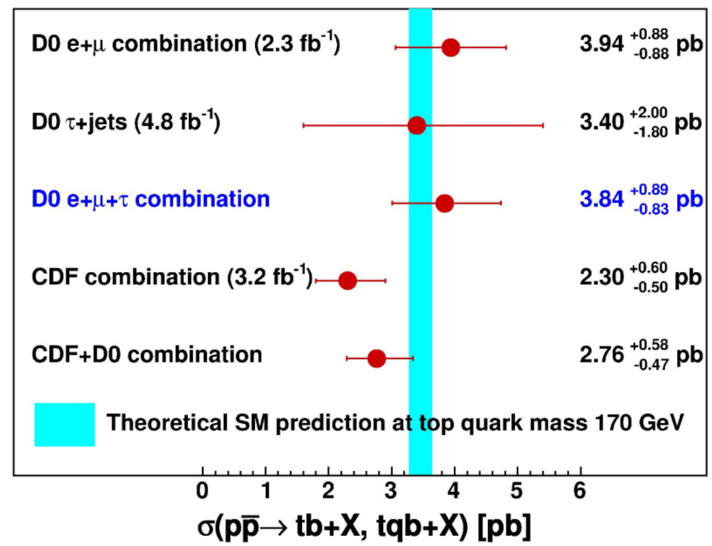
All-jets ttbar cross section

arXiv:0911.8286 **1 fb^{-1}**



single top cross section in tau+jets channel

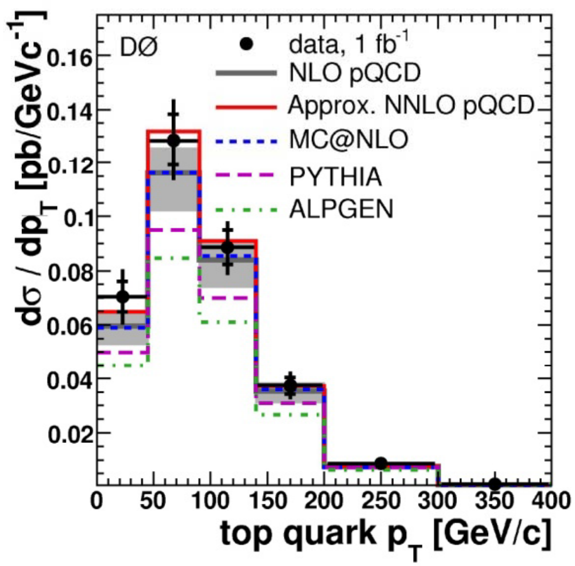
arXiv:0912.1066 **4.8 fb^{-1}**



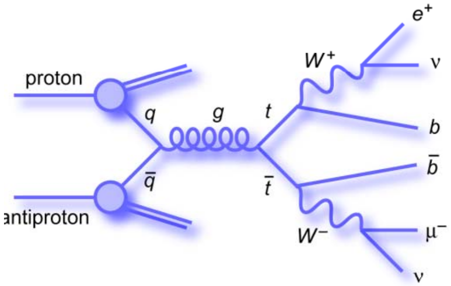
differential l+jets cross section as function of top p_T

arXiv:1001.1900

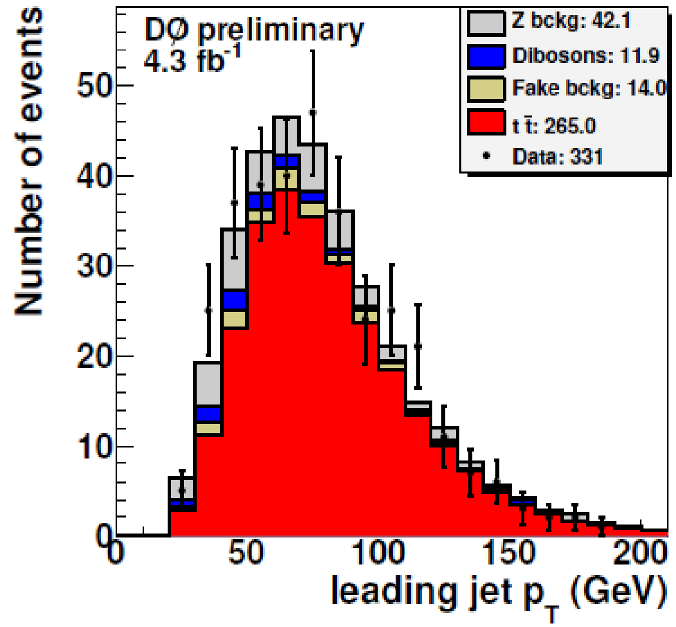
1 fb^{-1}



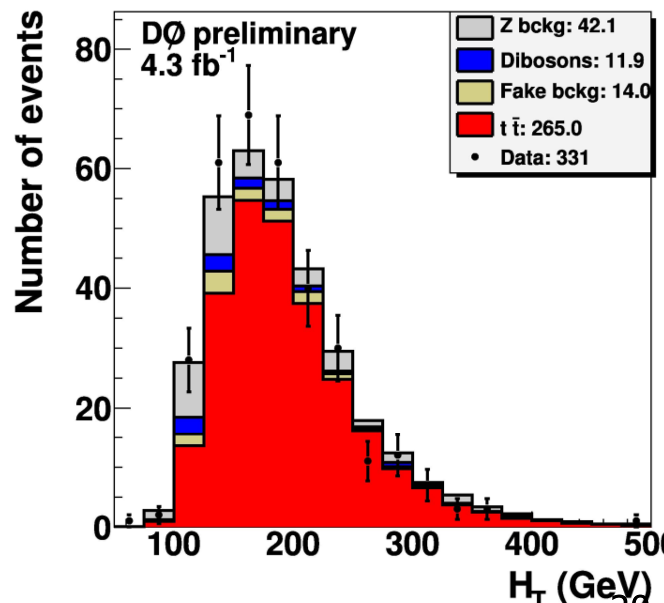
Run IIb dilepton analysis



2 leptons (e or μ) p_T>15 GeV,
2 jets, $|\eta|$<2.5 p_T>20 GeV
H_T or Boosted DecisionTree cuts against background



	ee	$e\mu$	$\mu\mu$
$Z \to \ell\ell$	$8.5^{+3.4}_{-3.4}$	$11.9^{+2.7}_{-2.5}$	$21.7^{+5.6}_{-6.2}$
Dibosons	$2.1^{+0.8}_{-0.8}$	$6.5^{+2.1}_{-2.0}$	$3.3^{+1.1}_{-1.2}$
Instrumental background	$0.1^{+0.2}_{-0.1}$	$10.7^{+4.1}_{-3.9}$	$3.2^{+0.8}_{-0.7}$
$t\bar{t} \to \ell\ell jj$ ($\sigma = 7.45$ pb)	$36.9^{+3.8}_{-3.8}$	143.4 ± 14.3	$45.1^{+4.4}_{-4.3}$
Total expected events	47.6 ± 6.2	$172.6^{+16.5}_{-16.4}$	$73.3^{+8.1}_{-8.8}$
Data	55	204	72



Total systematics: ~11%

Run IIa+b dilepton cross section (5.3 fb^{-1})

Run IIb

$$ee: \quad \sigma_{t\bar{t}} = 9.0^{+1.6}_{-1.4}\,(\mathrm{stat})\,^{+1.2}_{-1.2}\,(\mathrm{syst})\,\pm 0.7\,(\mathrm{lumi})\ \mathrm{pb};$$

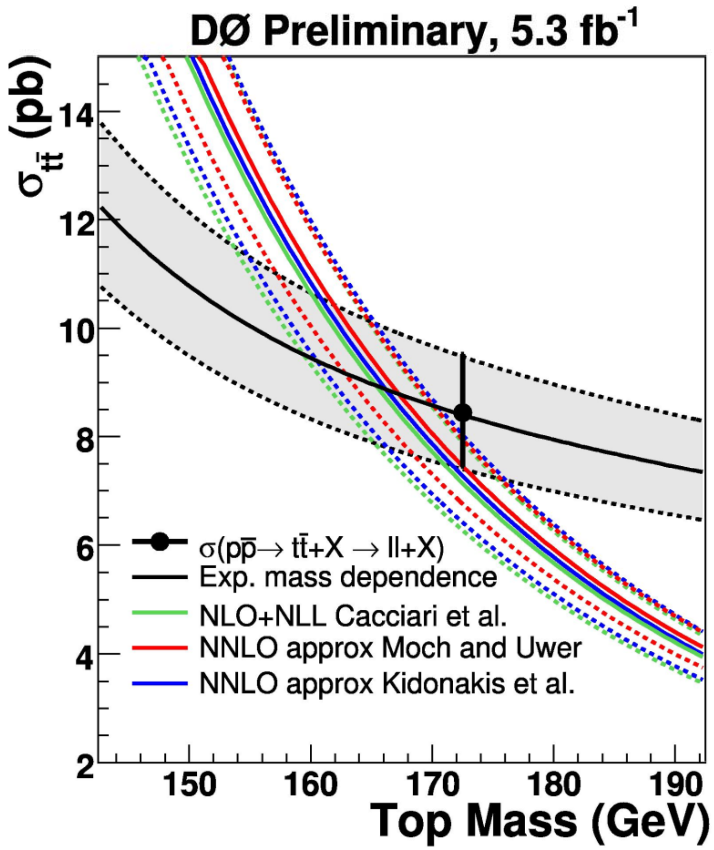
$$e\mu: \quad \sigma_{t\bar{t}} = 9.1^{+0.8}_{-0.7}\,(\mathrm{stat})\,^{+1.0}_{-1.0}\,(\mathrm{syst})\,\pm 0.6\,(\mathrm{lumi})\ \mathrm{pb};$$

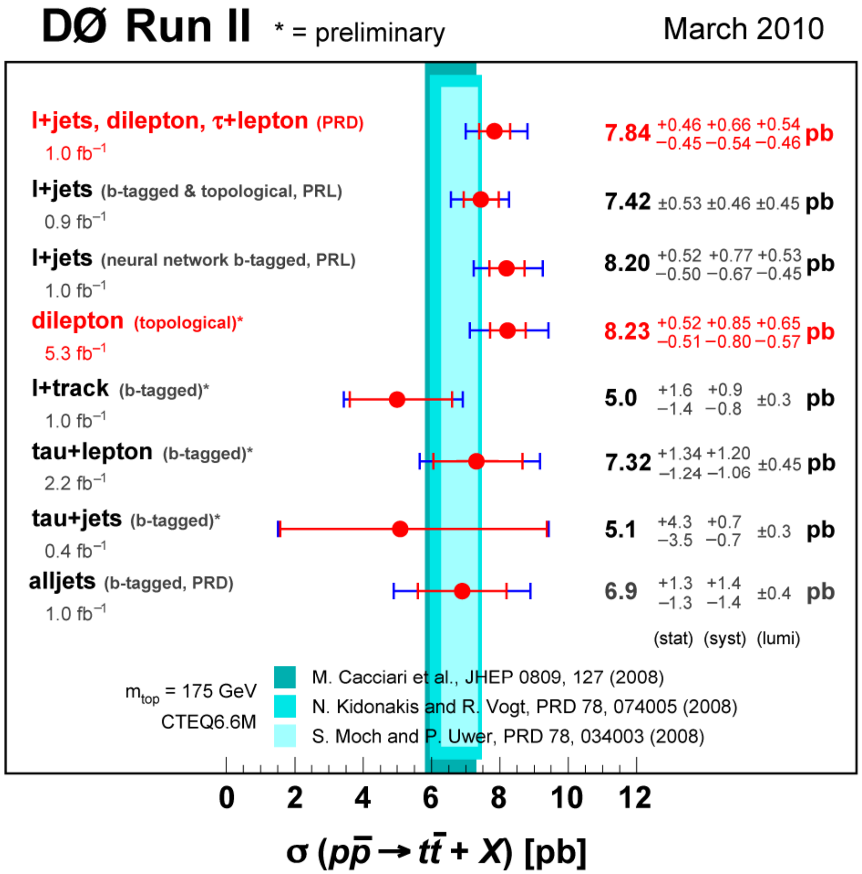
$$\mu\mu: \quad \sigma_{t\bar{t}} = 7.2^{+1.2}_{-1.4}\,(\mathrm{stat})\,^{+1.2}_{-1.4}\,(\mathrm{syst})\,\pm 0.7\,(\mathrm{lumi})\ \mathrm{pb};$$

$$\ell\ell: \quad \sigma_{t\bar{t}} = 8.8^{+0.6}_{-0.6}\,(\mathrm{stat})\,^{+1.0}_{-0.9}\,(\mathrm{syst})\,^{+0.7}_{-0.6}\,(\mathrm{lumi})\ \mathrm{pb}.$$

Run IIa+b @M_{top} =172.5 GeV

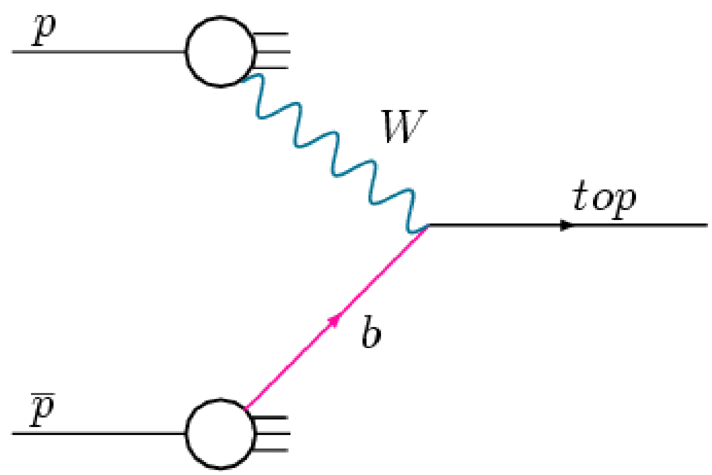
$$\ell\ell: \quad \sigma_{t\bar{t}} = 8.4 \pm 0.5\,(\mathrm{stat})\,^{+0.9}_{-0.8}\,(\mathrm{syst})\,^{+0.7}_{-0.6}\,(\mathrm{lumi})\ \mathrm{pb}$$





Top quark Width

$$\Gamma(t \to bW) = \sigma(t-\text{channel}) \frac{\Gamma(t \to bW)_{\text{SM}}}{\sigma(t-\text{channel})_{\text{SM}}}$$



$$\Gamma_t = \frac{\sigma(t-\text{channel}) \frac{\Gamma(t \to bW)_{\text{SM}}}{\sigma(t-\text{channel})_{\text{SM}}}}{\mathcal{B}(t \to bW)}$$

t-channel single top

$$\sigma(t\text{–channel})\,\mathcal{B}(t \to Wb) = 3.14^{+0.94}_{-0.80}\ \text{pb}$$

2.3 fb^{-1} PLB 682, 363 (2010)

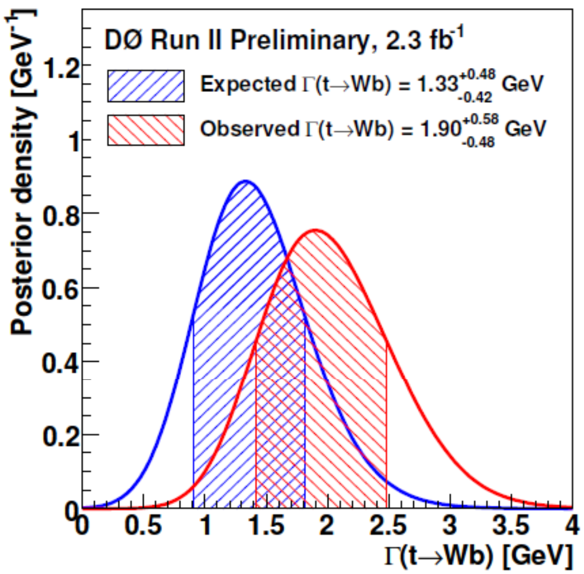
top decay branching ratio

$$R = \frac{\mathcal{B}(t \to Wb)}{\mathcal{B}(t \to Wq)} = 0.962^{+0.068}_{-0.066}(\text{stat})\ ^{+0.064}_{-0.052}(\text{syst})$$

0.9 fb^{-1} PRL 100, 192003 (2008)

Top (partial and total) Width

Partial width

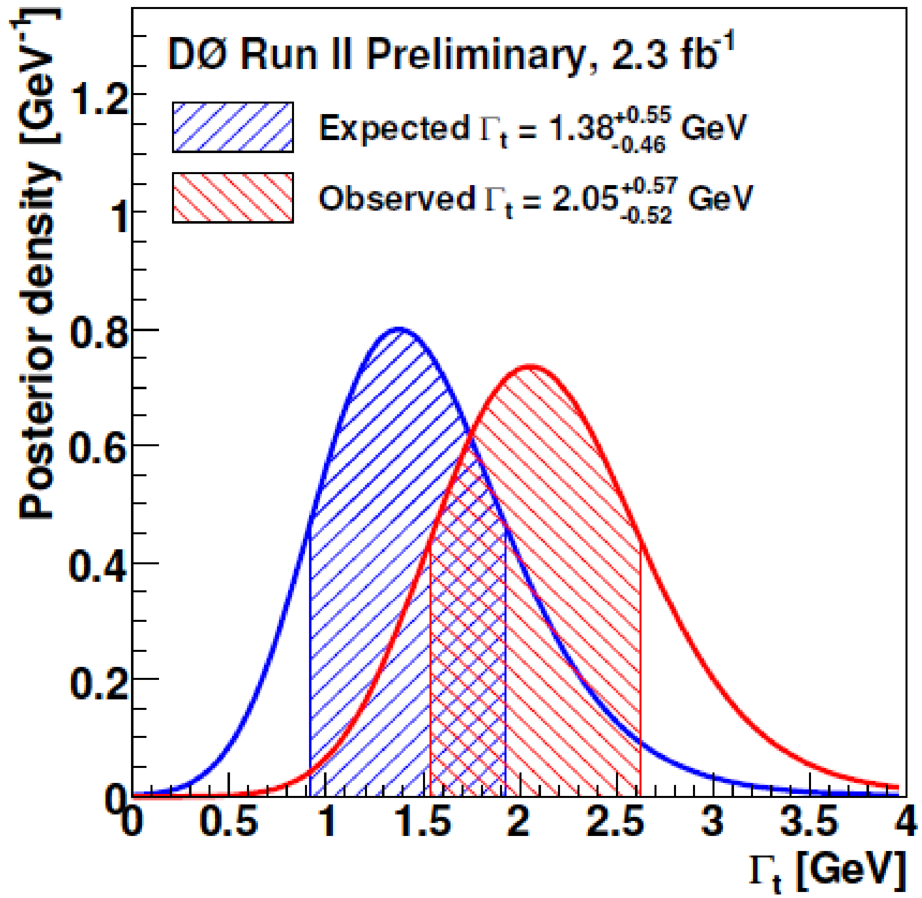


$$\Gamma(t \to Wb) = 1.90^{+0.58}_{-0.48}\ \text{GeV}$$

$$\Gamma_t > 1.21\ \text{GeV at 95\% C.L.}$$

$$\tau_t < 5.4 \times 10^{-25}\ \text{s}$$

Total width



$$\Gamma_t = 2.05^{+0.57}_{-0.52}\ \text{GeV}$$

$$\tau_t = (3.2^{+1.1}_{-0.7}) \times 10^{-25}\ \text{s}$$

Tevatron combination on W width

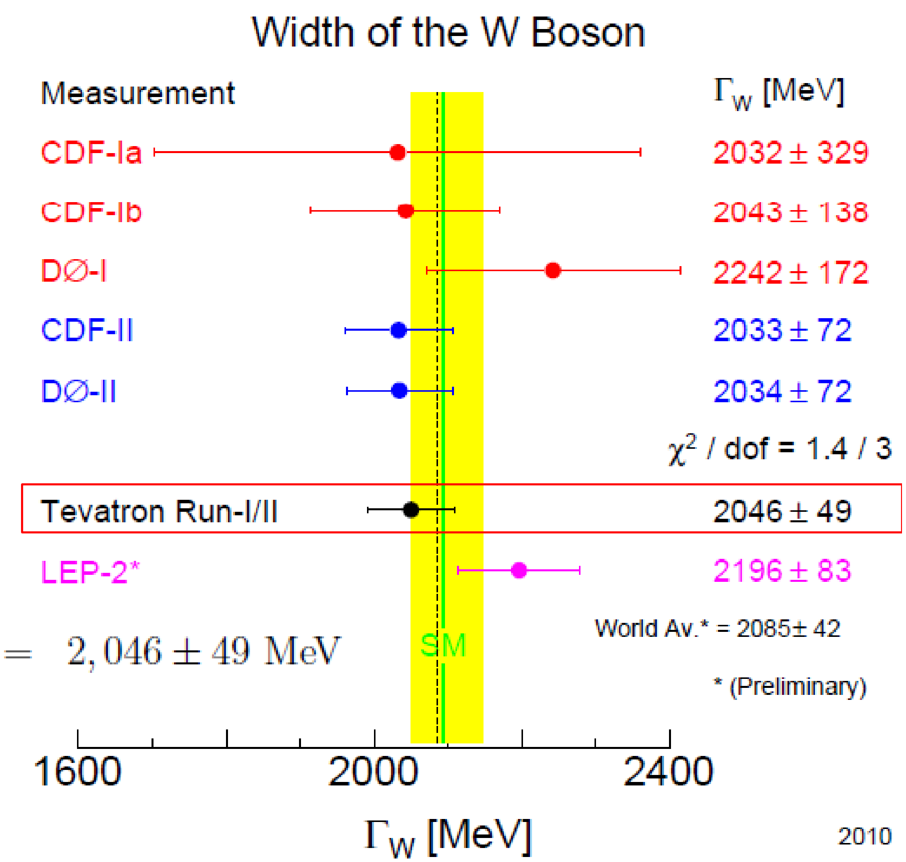
The width of the W boson determined by D0 in Run-II, using W →e nu decays observed in 1 fb−1 of data is extracted from fits to the transverse mass distribution in the range 100 < m_T < 200 GeV. The central value of the width is 2028 ± 72 MeV.

	Run-I			Run-II	
	CDF-Ia	CDF-Ib	DØ-Ib	CDF	DØ
Γ_W (published)	2,110	2,042.5	2,231	2,032	2,028.3
Total uncertainty (published)	329	138.3	172.8	72.4	72
M_W used in publication	80,140	80,400	80,436	80,403	80,419
Correction to Γ_W from M_W	−78	0.3	11.1	1.2	6.0
Γ_W (corrected)	2,032	2,042.8	2,242.1	2,033.2	2,034.3
Total uncertainty(corrected)	329.3	138.3	172.4	72.4	71.9
Uncorrelated uncertainty (corrected)	327.6	136.8	167.4	68.7	68.5

	Relative Weights in %
CDF Ia	1.6
CDF Ib	10.8
D0 I	5.4
CDF II	41.2
D0 II	41.2

TeV error improves from 62 to 49 MeV

$$\Gamma_W = 2,046 \pm 49 \text{ MeV}$$



a preliminary world average of $\Gamma_W = 2,085 \pm 42$ MeV, which is in excellent agreement with the SM prediction of $\Gamma_W = 2,093 \pm 2$ MeV [21].

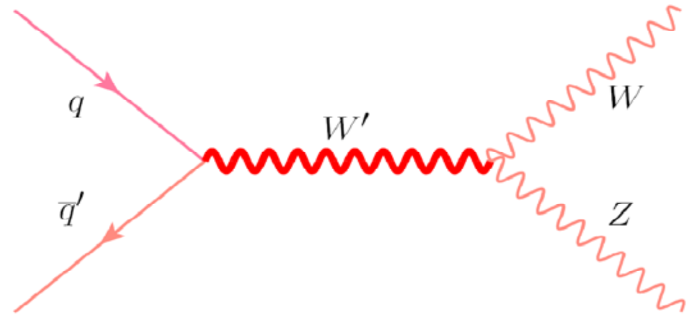
New Phenomena Results

Search for Resonances

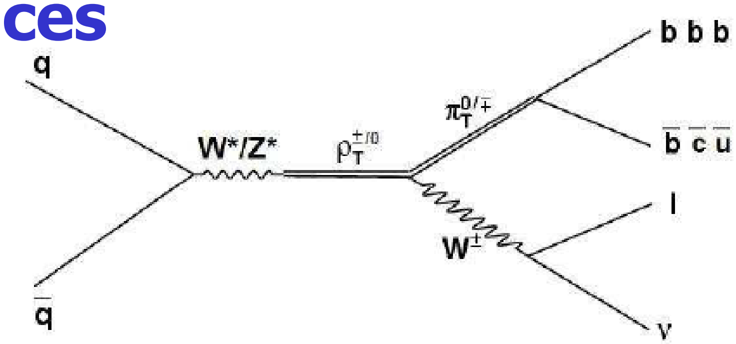
- $W' \rightarrow W Z$ ($\rightarrow$ tri-lepton)
- RS Gravitons $\rightarrow e^+e^-$ / $\gamma\gamma$

Search for W' resonances

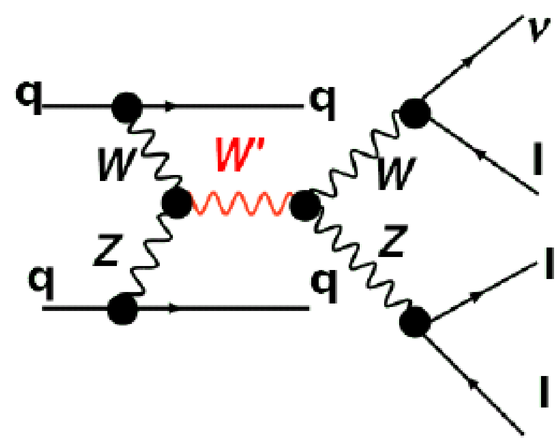
- **The sequential SM**
  - **same couplings as in the SM**



- **Search for Technicolor resonances**
  - $\rho_T/a_T \rightarrow WZ \rightarrow lll\nu$



- Extra-Dim. Higgsless model
- Little Higgs model



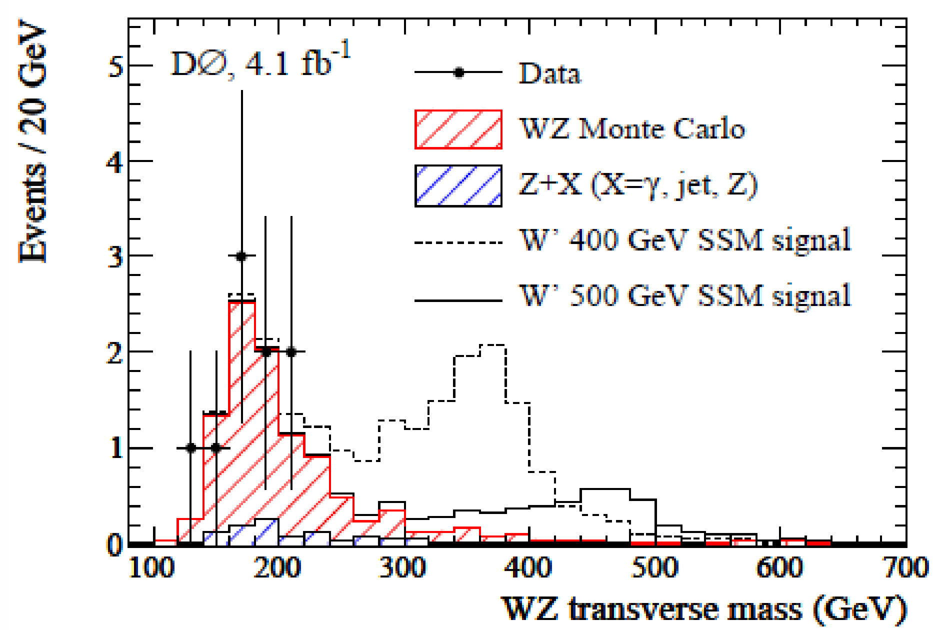
W'→ WZ → 3 leptons + ν

4 signatures: eeeν, eeμν, eνμμ, μμμν
3 leptons: p_T > 20 GeV, Missing E_T
Select Z candidates

Systematic uncertainties →

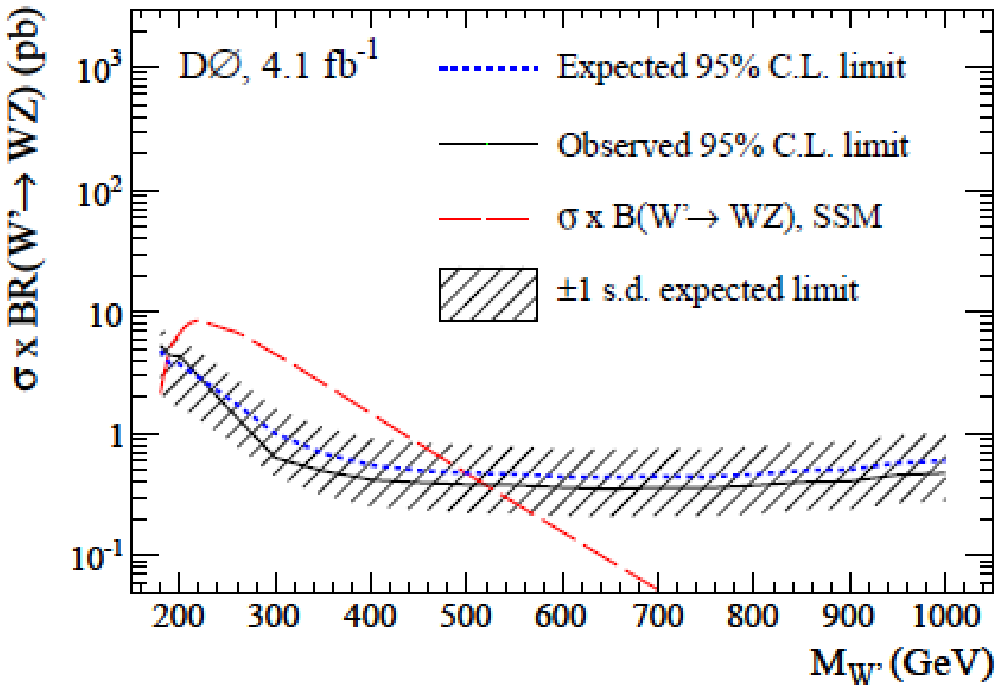
Source	Uncertainty
Luminosity	6.1%
$Acc \times \epsilon_{trigger} \times \epsilon_{ID}$	20%
$Z + jets$	40%
$Z\gamma$	100%
Theory	5%

Source	Total
W'(500 GeV)	4.4 ± 1.1
WZ	9.0 ± 1.5
ZZ	1.0 ± 0.2
Z + jets	0.2 ± 0.1
$Z\gamma$	0.1 ± 0.1
Total	10.2 ± 1.6
Observed	9

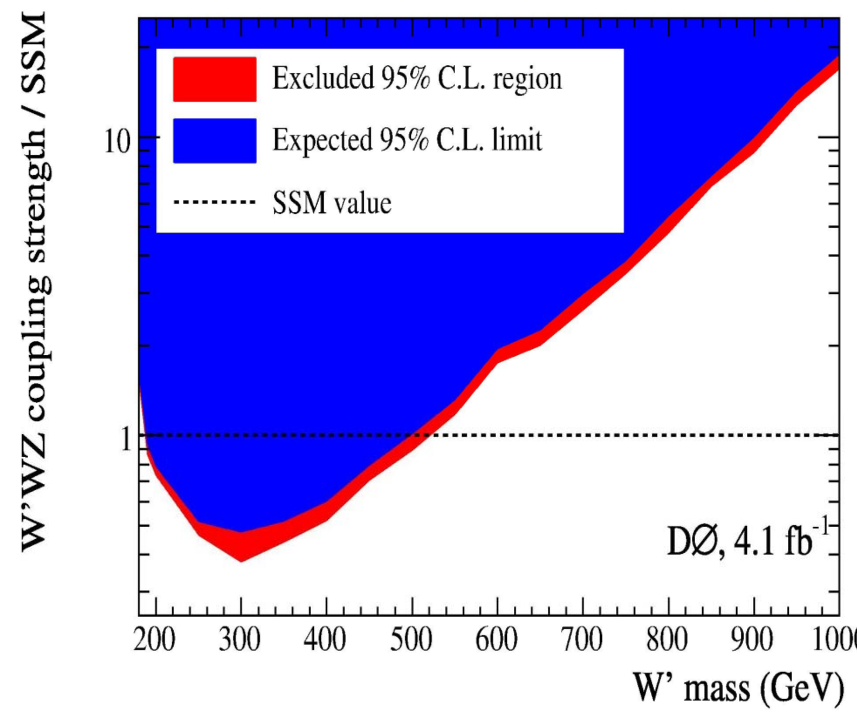


Limits on W', on W'WZ couplings

- Within the SSM model, we exclude
  - 188 GeV < M(W') < 520 GeV (obs)
  - 188 GeV < M(W') < 497 GeV (exp)



Extend to W'WZ couplings



Limits on Low Scale Technicolor

Within LSTC

- Mass of π_{TC} goes up rapidly than masses of (ρ_T, ω_T)
- Mostly decay with at least one gauge boson

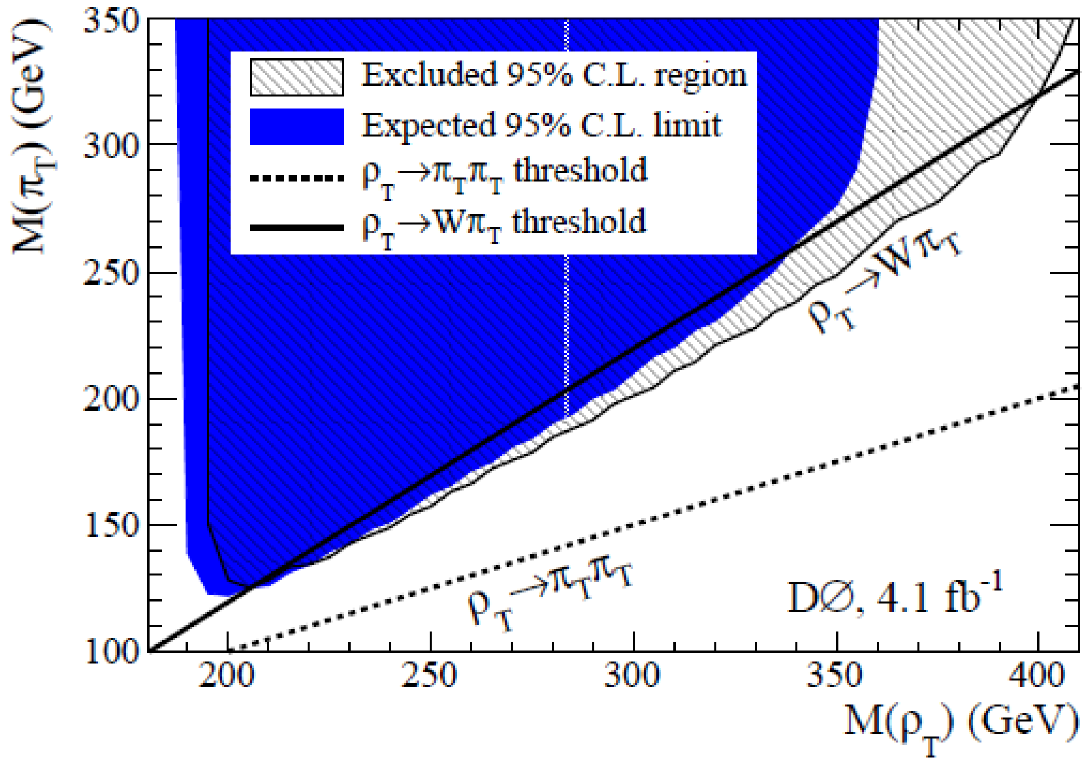
  $\rho^{\pm}_T/a^{\pm}_T \rightarrow W^{\pm}\pi_T; \quad \rho^{\pm}_T/a^{\pm}_T \rightarrow W^{\pm}Z;$
- Very distinct signature, narrow resonances

Previous searches were done in $\rho_T/a_T \rightarrow W\pi_T \rightarrow l\nu bq$

- Allowed only if $M(\pi_T) < M(\rho_T) - M(W)$

$M(\pi_T) > M(\rho_T) - M(W)$

→ decay to WZ



- We exclude
  - $208 \text{ GeV} < M(\rho_T) < 400 \text{ GeV}$ at 95% C.L. (obs.)
  - $201 \text{ GeV} < M(\rho_T) < 339 \text{ GeV}$ at 95% C.L. (exp.)

Randall-Sundrum Gravitons

- Randall-Sundrum Model

5 dimensional warped geometry

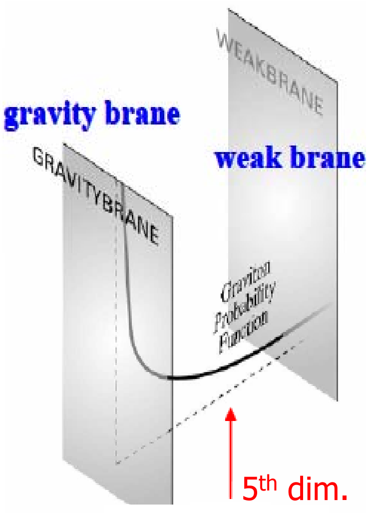
SM fields: weakbrane Graviton: gravitybrane

Any mass parameter M on the weakbrane will correspond to a physical mass M_0 in the fundamental higher dimensional theory.

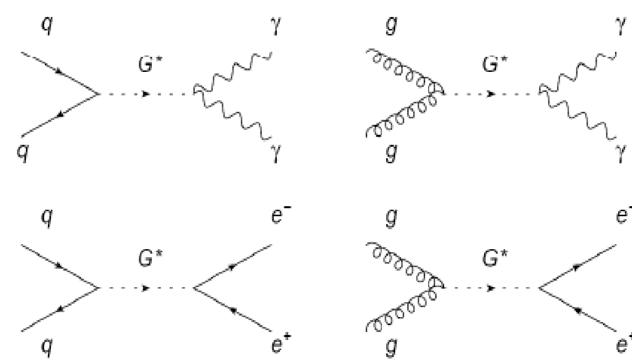
$$M = \exp(-kr_c\pi)M_0$$

warp factor

TeV scales are generated from fundamental scales via a geometrical exponential factor if $kr_c \sim 11\text{-}12$.

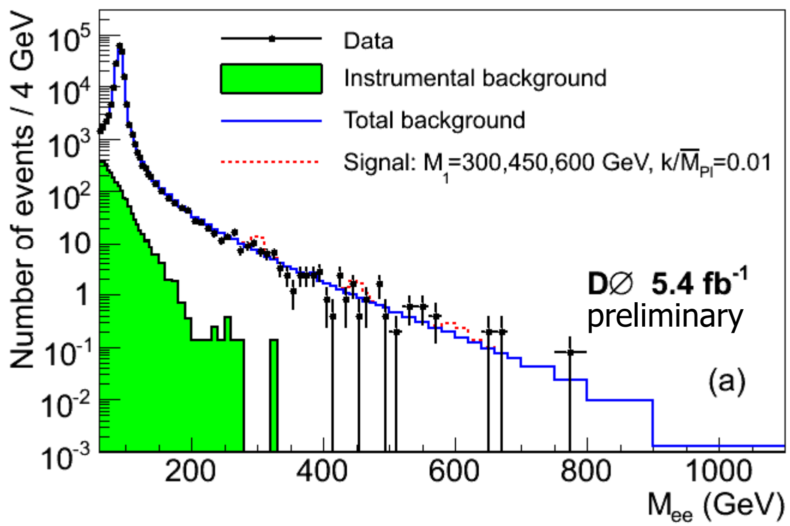


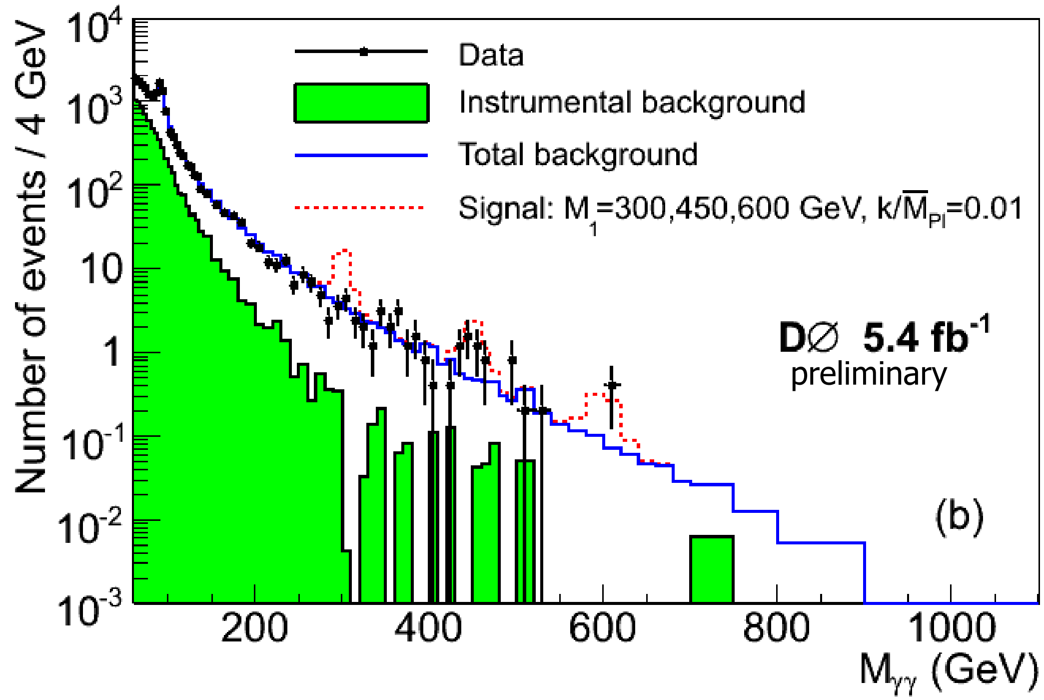
- Compactification of 5th dimension : Kaluza-Klein (KK) gravitons
- Spin-2 with universal coupling to the SM : BR($\gamma\gamma$)/BR(ee) = 2



- Parameters : 1) mass of the lightest KK graviton M_1
  2) coupling constant $k/\overline{M}_{Pl}$ $0.01 \le k/\overline{M}_{Pl} \le 0.1$
- Narrow Resonances

ee and γγ spectra



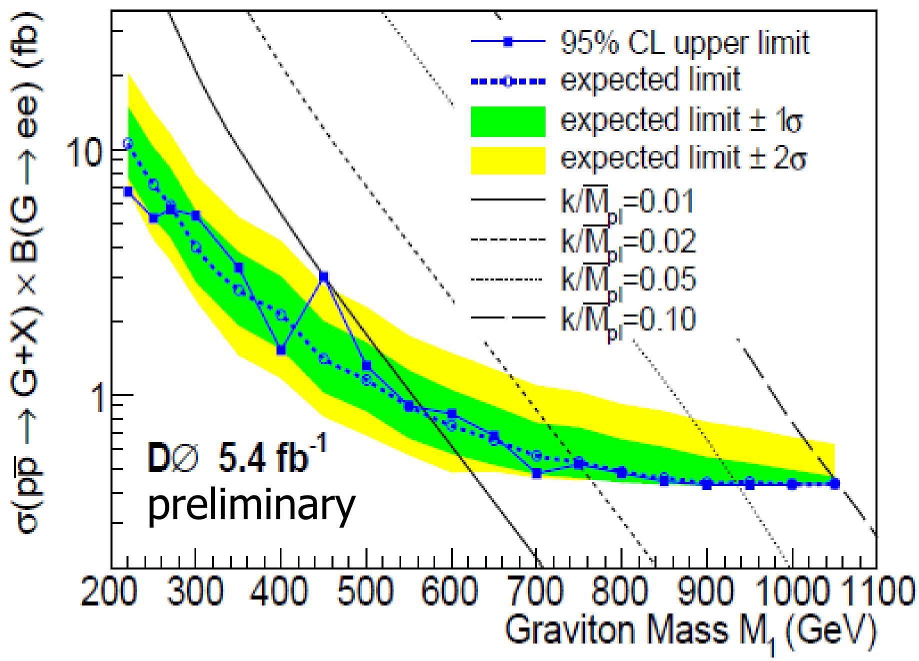


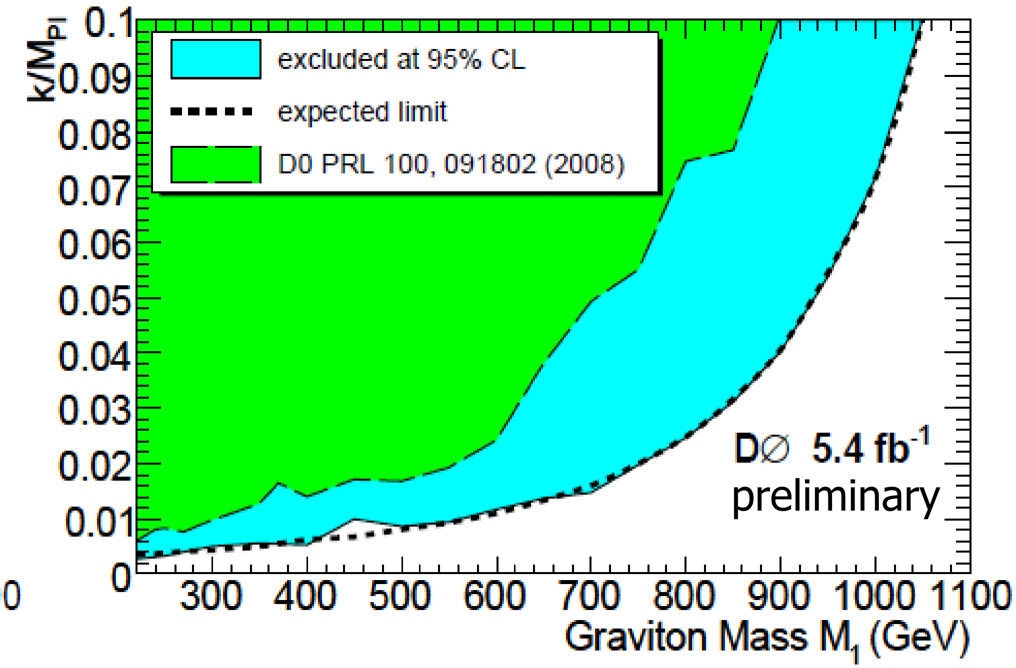
2 EM objects p_T>25 GeV, $|\eta|$<1.1

2 track-match → ee
1 or 0 track match → γγ

GeV	60-200	200-300	300-400	400-500	500-600	600-
Data	16703	212	55	16	2	2
Bkgnd	16703	238.0±29.8	48.3±6.0	14.1±1.8	4.4±0.6	1.9±0.2

Limits on RS gravitons





RS gravitons excluded for M < 1100 GeV , assuming k/M=0.1
< 560 GeV 0.01

New MSSM Higgs Results

- **Minimal Supersymmetry Standard Model:**
  Two Higgs doublet fields
  After EWSB: four massive scalars (h^0,H^0,$H^\pm$) and one pseudo-scalar (A^0)

- **MSSM at large tanβ:**
  Φ^0={h^0/H^0,A^0} nearly degenerate in mass
  Coupling to b enhanced ($\propto$ tanβ)

Significant increase in production rate: $\sigma_{\Phi+X} \propto 2 \times \tan^2\beta$
BR($\Phi^0 \to bb$)~90%, BR($\Phi^0 \to t^+t^-$)~10%

b(b)+$\Phi^0 \to \tau_\mu \tau_{had}$ b(b)
- 2.7 fb-1

D0 MSSM combination
- based on 2.6 fb^{-1}

Updated Tevatron combination (see Matt's talk)
- with $\Phi^0 \to \tau\tau$ (2.2 fb^{-1})

$b\phi \rightarrow b\, \tau_\mu\, \tau_h$

Muon:

p_T>12 GeV, $|\eta_{det}|$<2.0

Tau:

Type 1,2 : p_T>10 GeV

Type 3: p_T>15 GeV

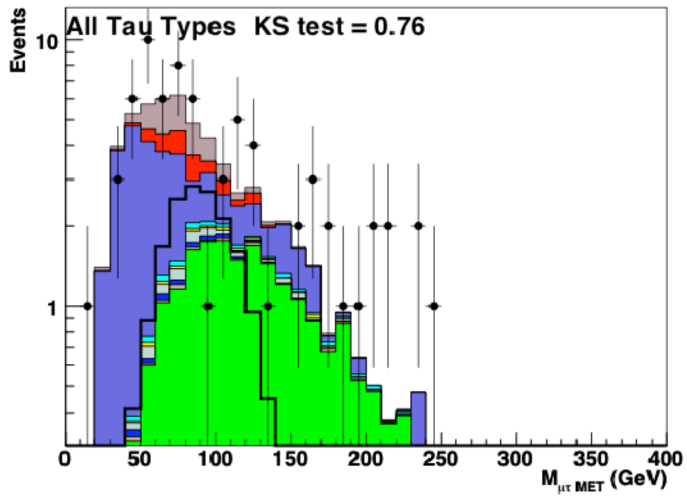
Jets

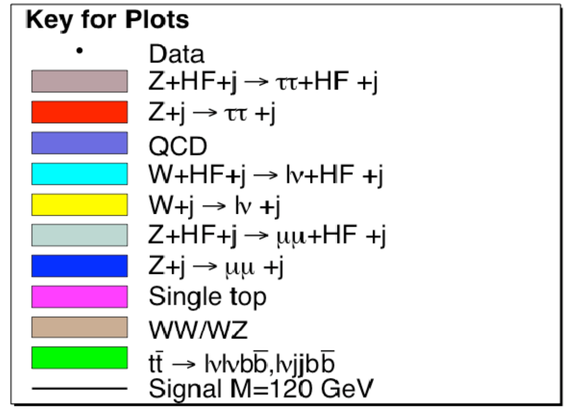
p_T>15 GeV, $|\eta|$<2.5

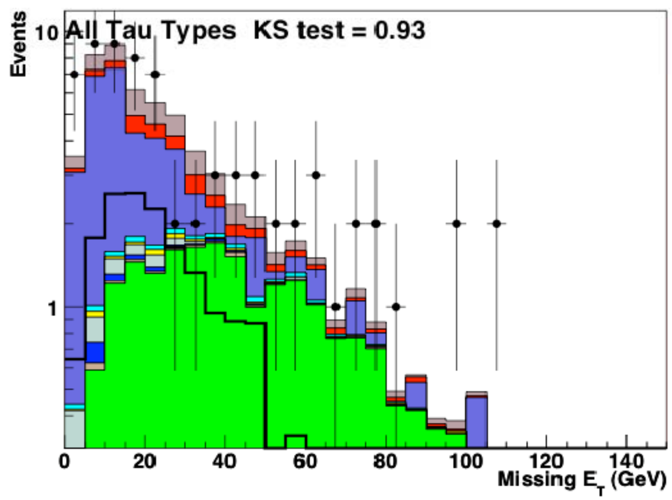
b-tagging

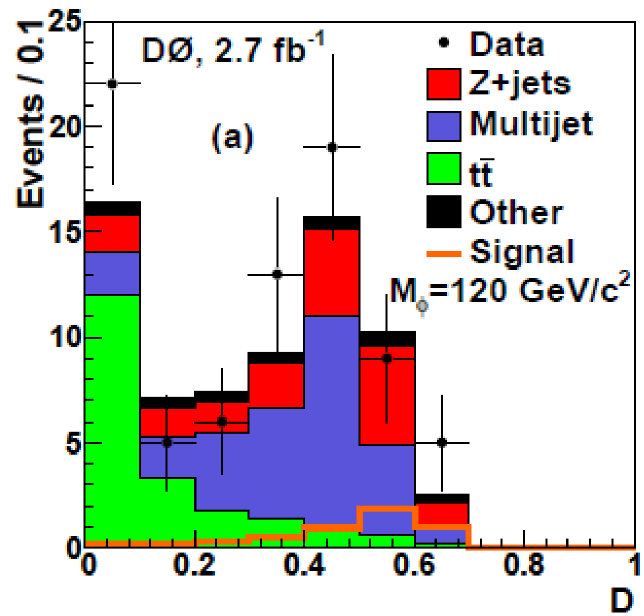
NN_{btag}

Channel competitive at low mass since not swamped by $Z\rightarrow\tau\tau$

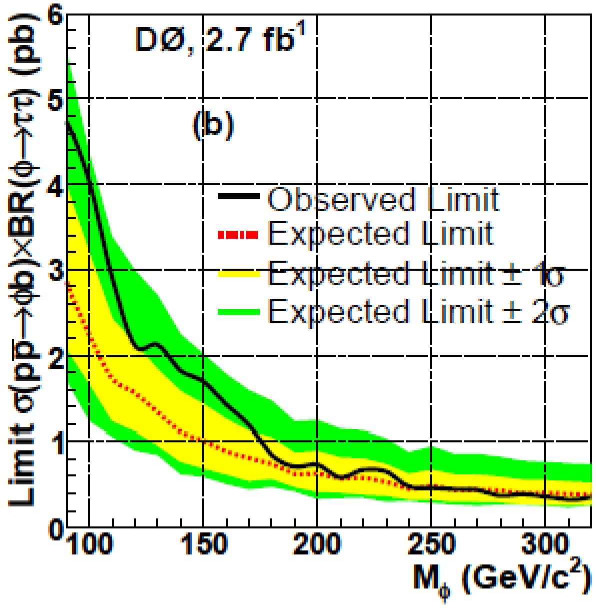


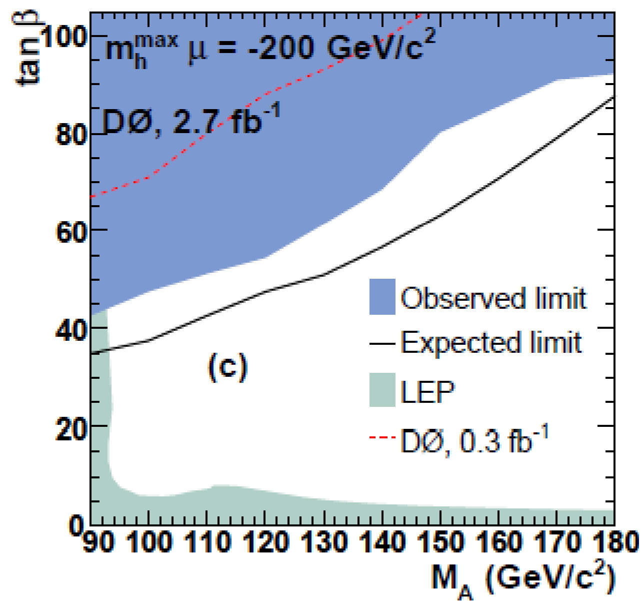




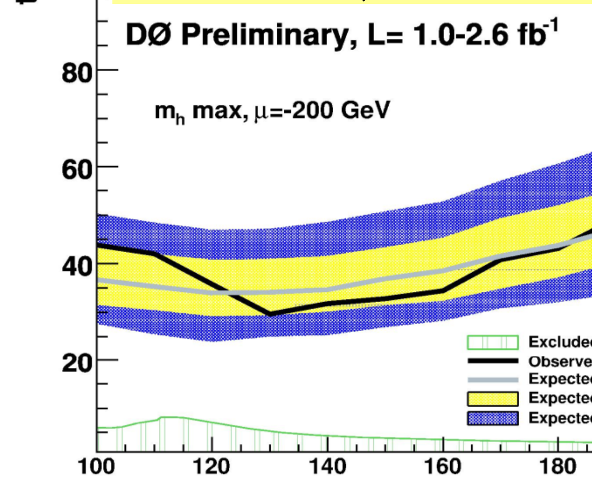


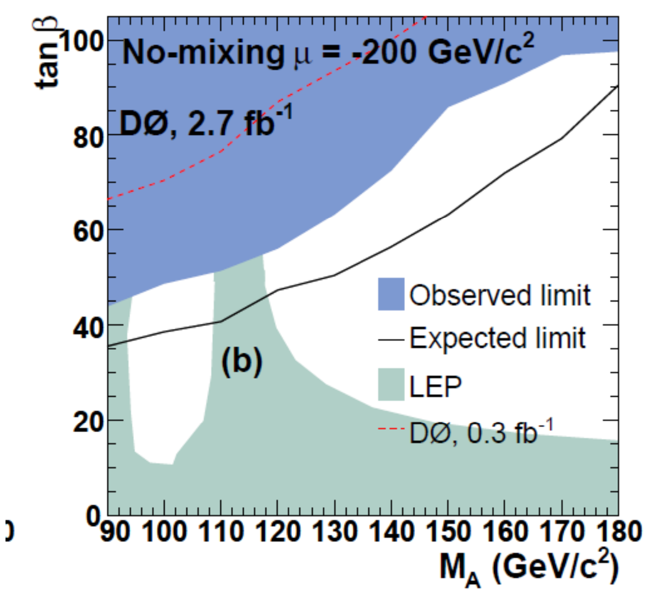
bφ → b τ_μ τ_h limits





D0 combination with 1.2 fb^{-1} $b\ \tau_\mu\ \tau_h$

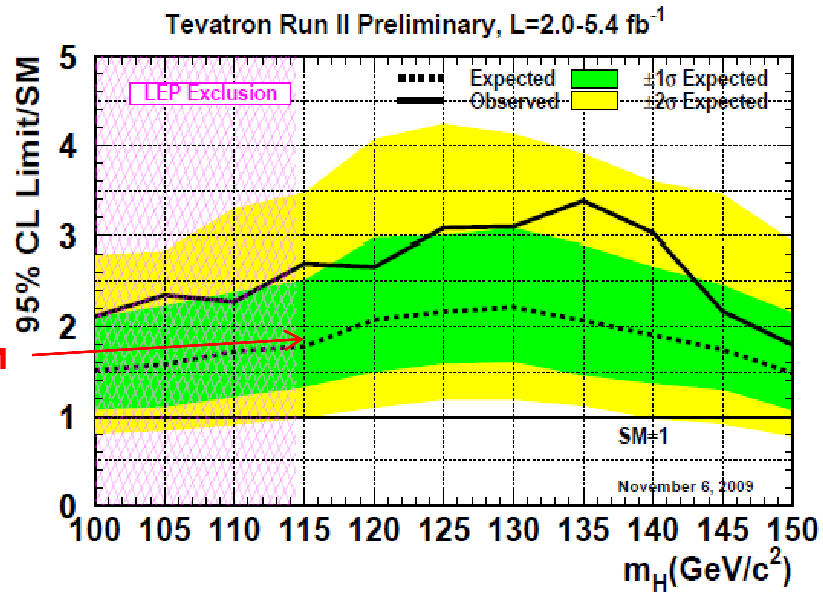


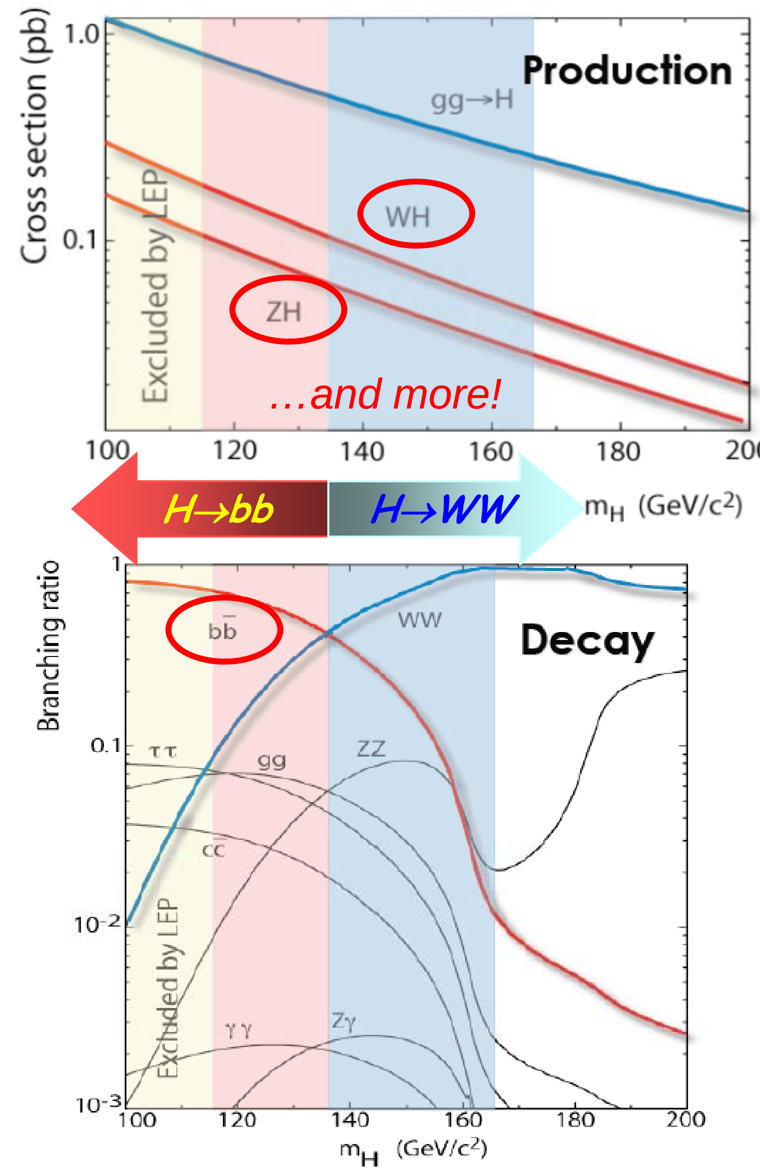


Future updates of D0 and CDF+D0 combinations will greatly benefit from this channel, in particular at low m_A

SM Higgs Searches, Low Mass Higgs

@M_H=115 GeV
Obs:2.7 x σ_{SM}
Exp: 1.8 x σ_{SM}





Major effort underway to continue to improve sensitivity:

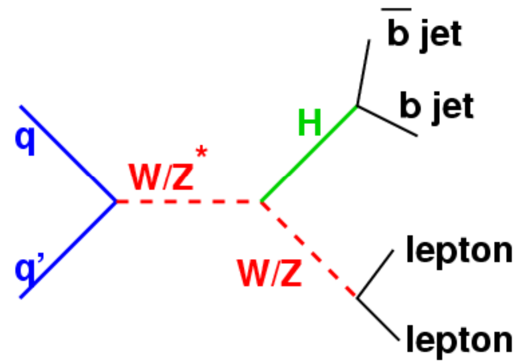
- Adding channels (i.e. τ,γ)
- Optimized object identification/resolution
- Optimized selections and signal-to-bckg discrimination (multivariate techniques), and of course, add more luminosity

SM Higgs Searches at the Tevatron

Low mass (m_H <~135 GeV):
dominant decay:

$$H \to b\bar{b}$$

Use associated production modes to get better signal/background



$$q\bar{q}' \to WH \to \ell \nu b\bar{b}$$

$$q\bar{q} \to ZH \to \ell^+ \ell^- b\bar{b}$$

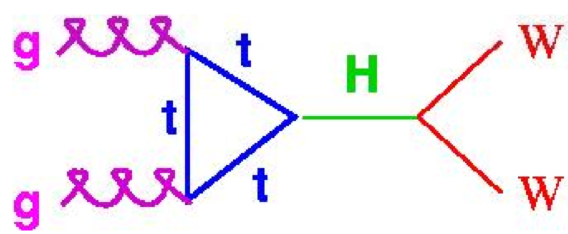
$$q\bar{q} \to ZH \to \nu\bar{\nu} b\bar{b}$$

Intermediate mass:

$$q\bar{q} \to WH \to WWW^{(*)}$$

High mass (m_H>~135 GeV):
dominant decay:

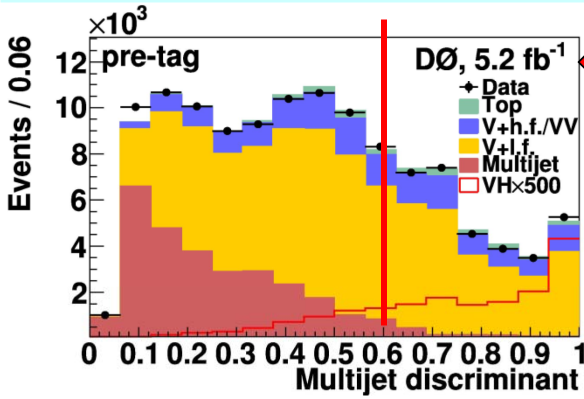
$$H \to WW^{(*)}$$



$$gg \to H \to WW \to \ell \nu \ell' \nu'$$

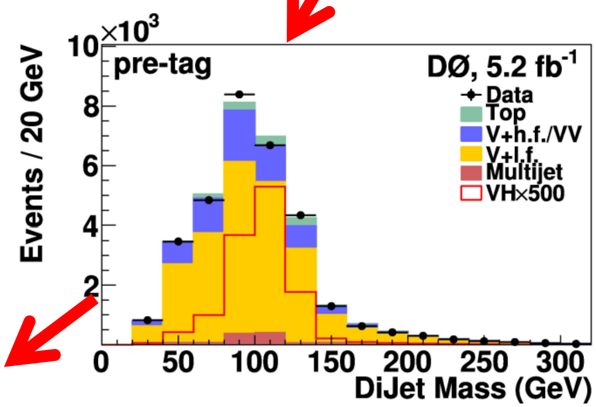
Published with more than 5 fb^{-1}
Other channels to follow soon

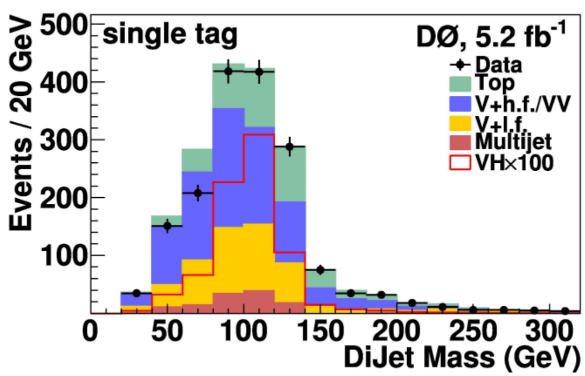
ZH→ νν bb

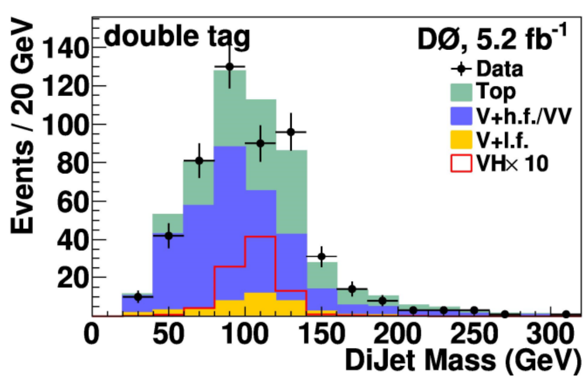


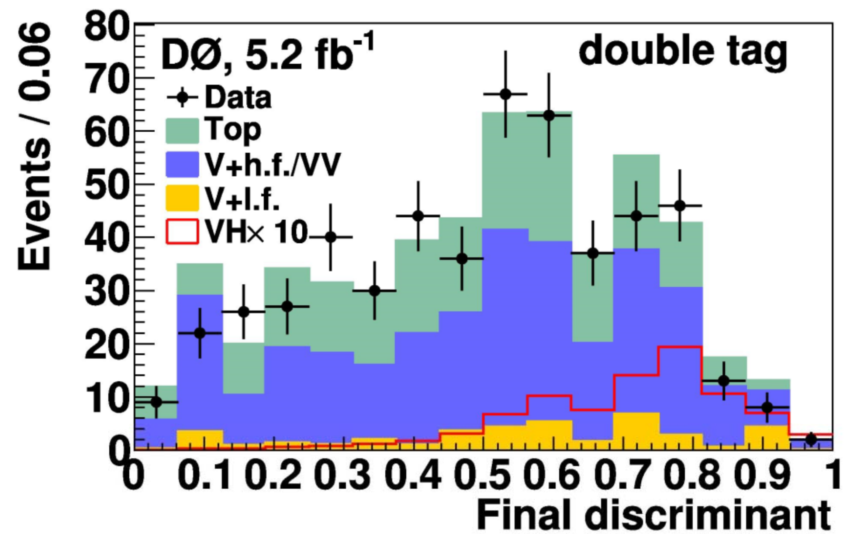
Cut @ 0.6 removes 95% of the QCD background, 65% of non QCD background and keeps 70% of signal

Most difficult final state among most sensitive channels → good test!

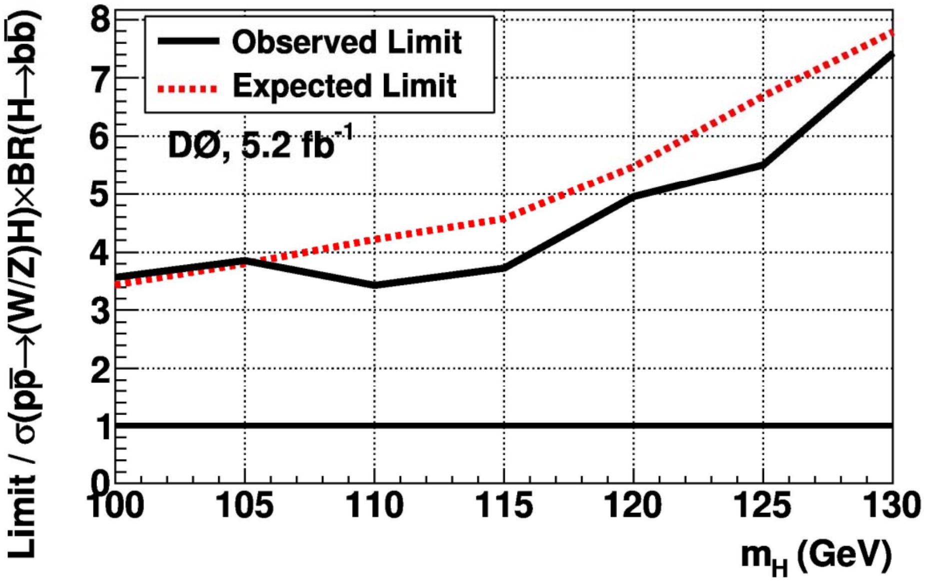


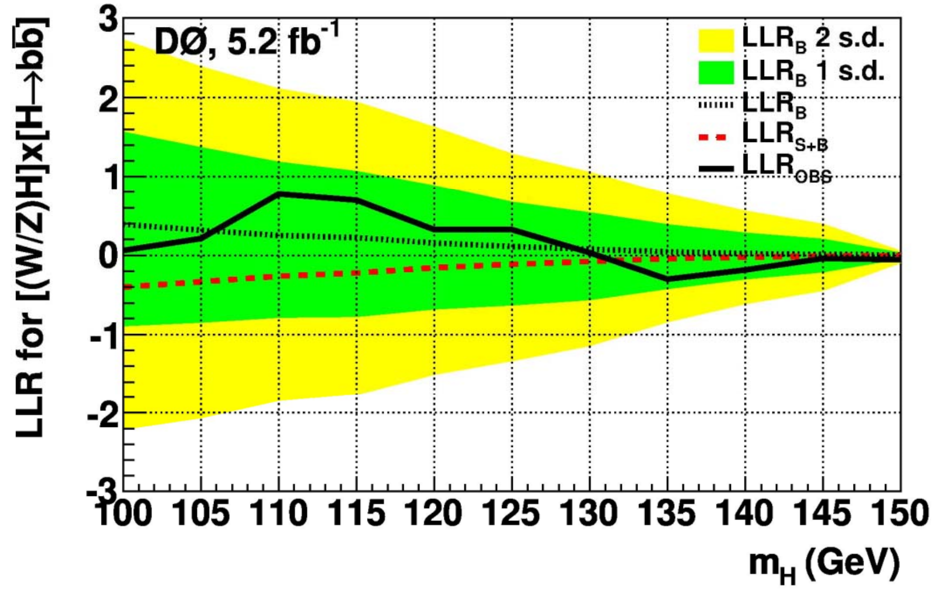






ZH→ νν bb

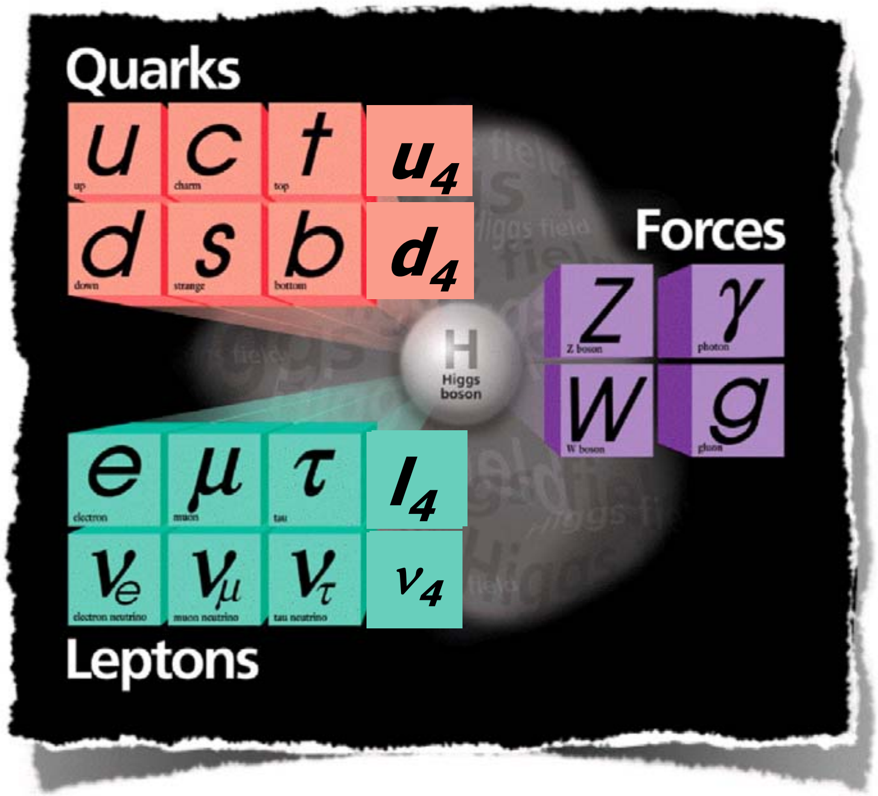




Observed Limit 3.7 x SM @ m_H =115 GeV
Expected Limit 4.6 x SM Phys. Rev. Lett. **104**, 071801 (2010)

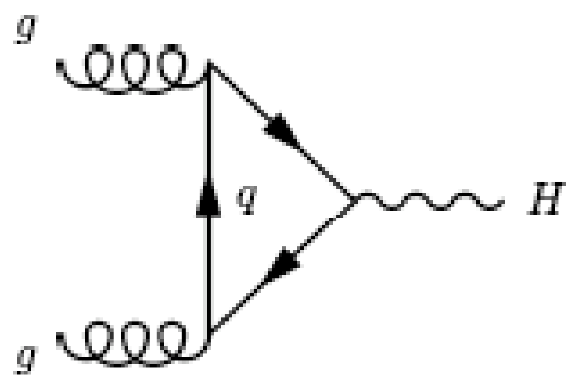
What to do while Luminosity builds up ?
- ➔ **Observe VZ with Z➔ bb**
- ➔ **Search for BSM Higgs**
- ➔ **Search for SM Higgs in extended SM (4th gen.)**

SM: 4th generation extension



- 4th generation of chiral fermions
- major constraints
  - invisible Z width
    - $M_{\nu 4}$ > 50 GeV
  - direct searches
    - M_{u4} > 256 GeV (CDF)
  - generational mixing
- LEP II bounds for unstable ν4
  - $M_{\nu 4}$>100 GeV

Can we exclude a 4th Generation in the SM with our results on the Higgs, since the ggH production is strongly (x9) enhanced ?

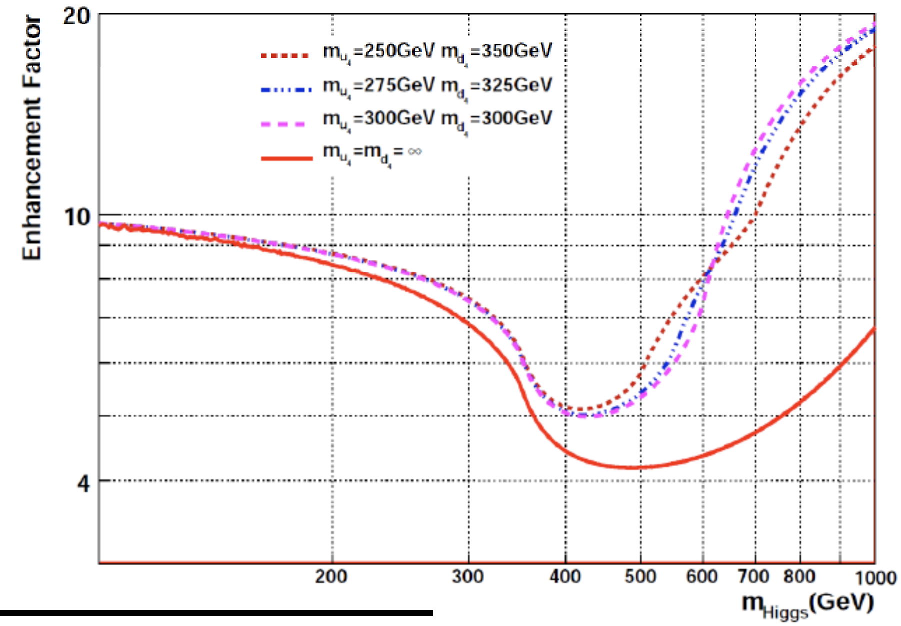


4^{th} generation Higgs production & decay

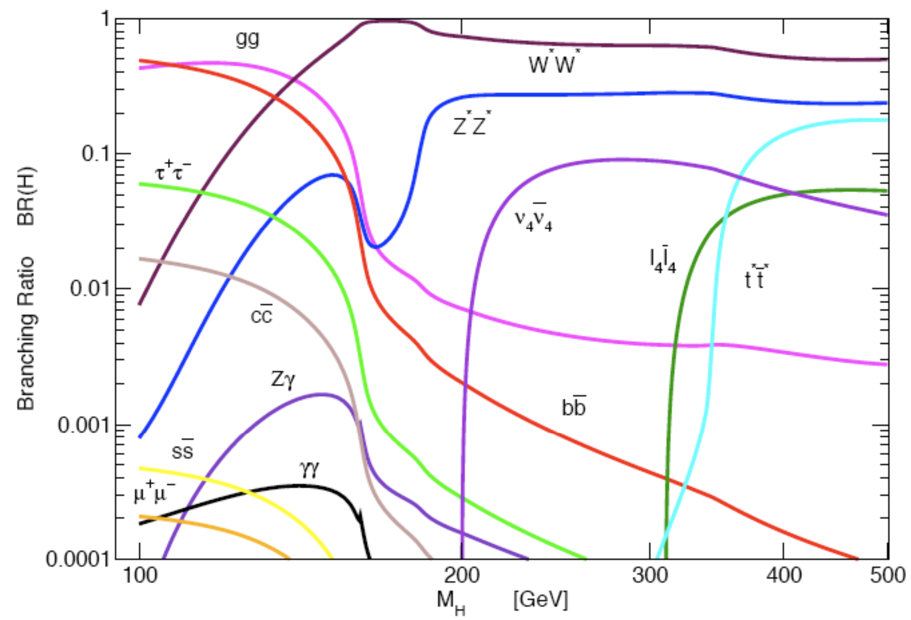
- **gg→H production through a heavy quark triangle loop**
- **for each additional quark, an additional contribution**
- **gg→H coupling enhanced by x3**

➔ σ(gg→H) x 9

- **associated production and vector boson fusion left unmodified**



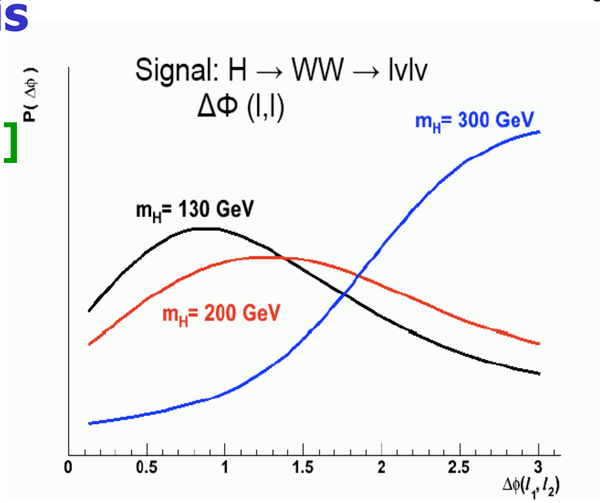
- **modification to the gg→H coupling changes the branching ratio**
- **H->WW still dominant decay mode above 135 GeV**
- **modified HDECAY with 4^{th} generation to calculate Higgs branching ratios**
  - **Kribs, Plehn, Spannowsky, Tait**
- **2 mass scenarios considered but little difference**

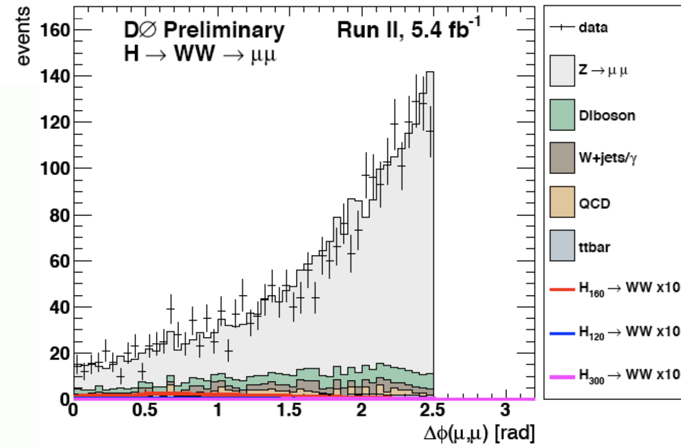


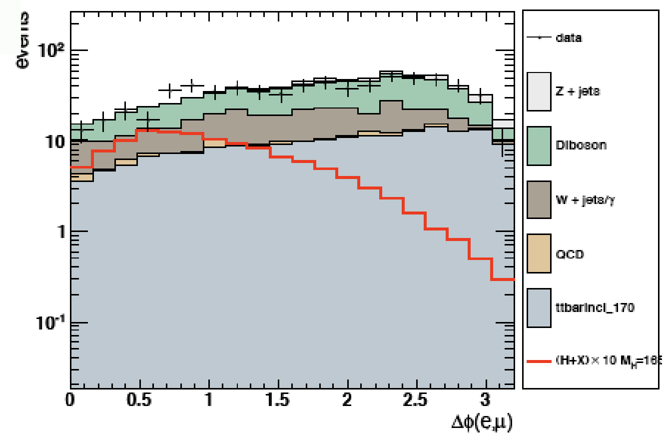
Modified $\Delta\phi(l_1, l_2)$ cut, Discriminant

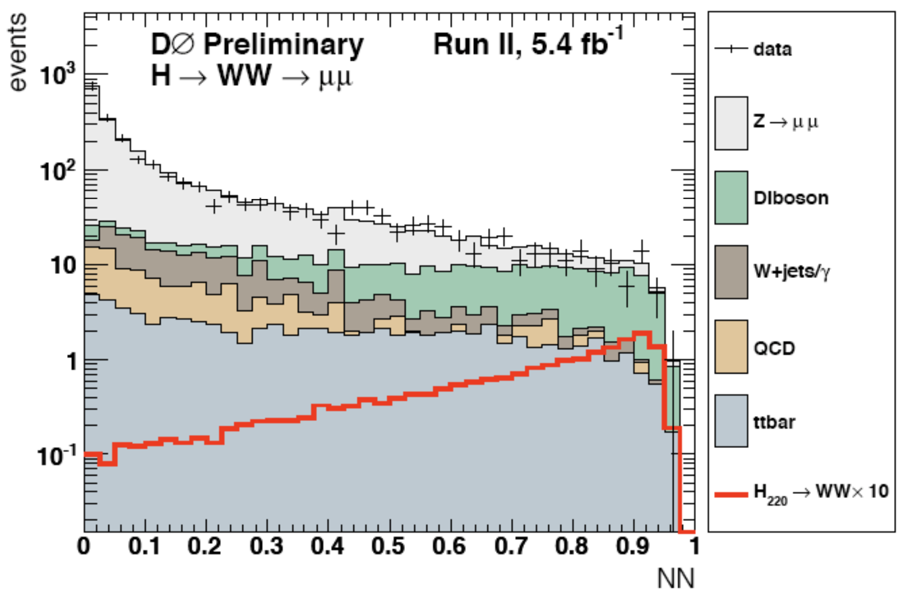
Modifications to SM analysis

- only gg→H→WW signal
- extend M_H range [110-260]
- remove $\Delta\phi(l_1, l_2)$ in eμ
  $\Delta\phi(l_1, l_2)<2.5$ for ee and μμ

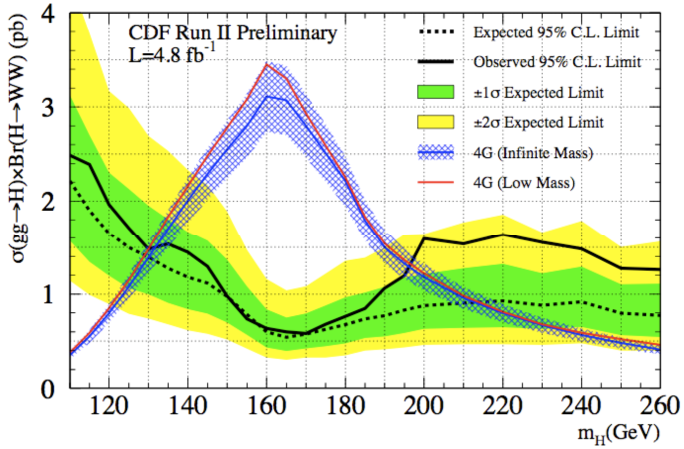


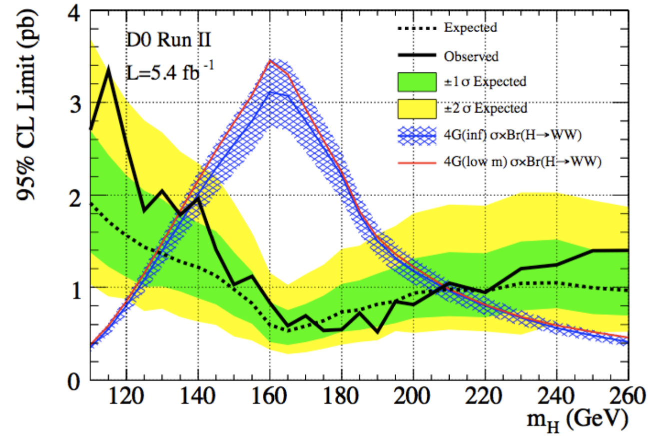






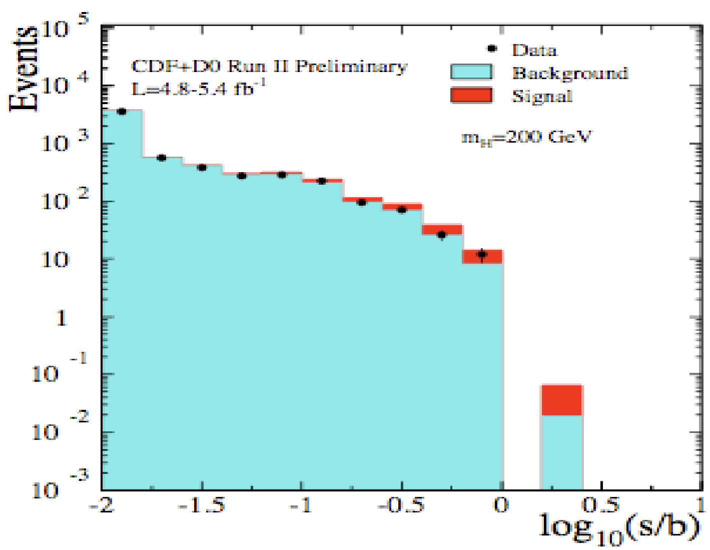
CDF and D0 limits

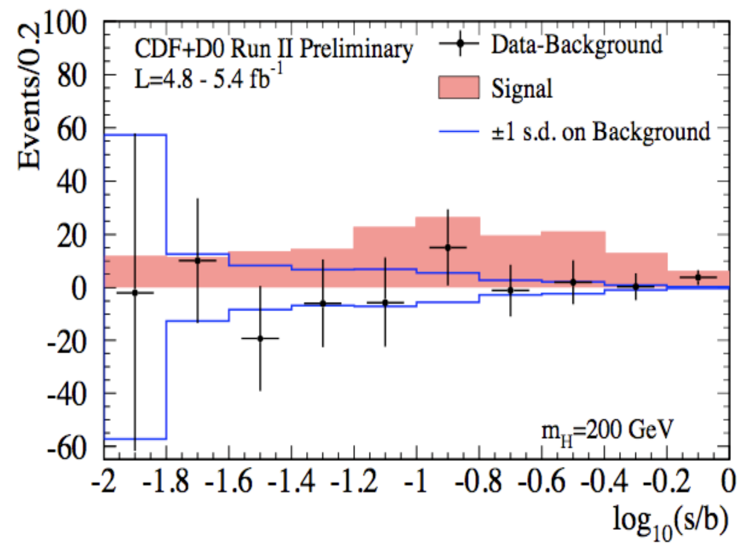




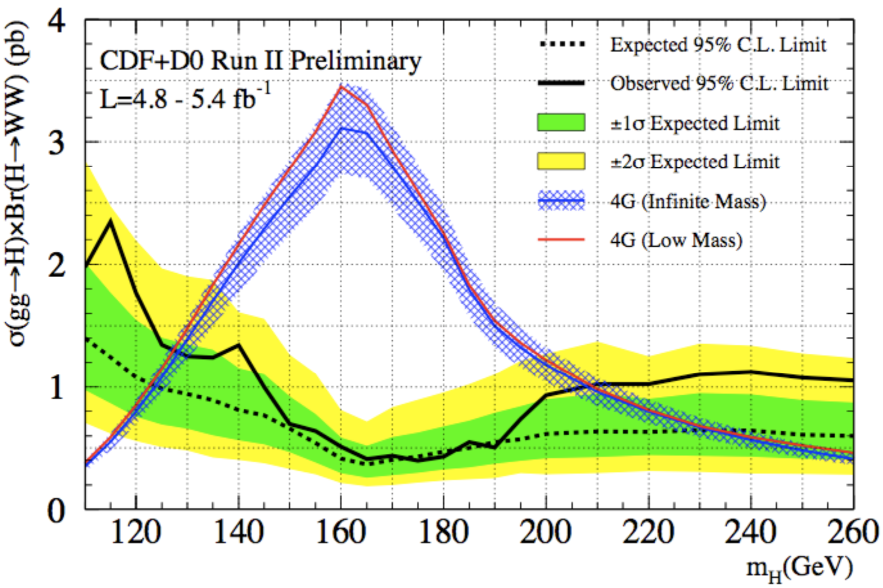
- absolute limit $\sigma(gg \to H) x BR(H \to WW)$ [pb]
- theory error 14%, for infinite and "low" mass 4^{th} gen. quarks

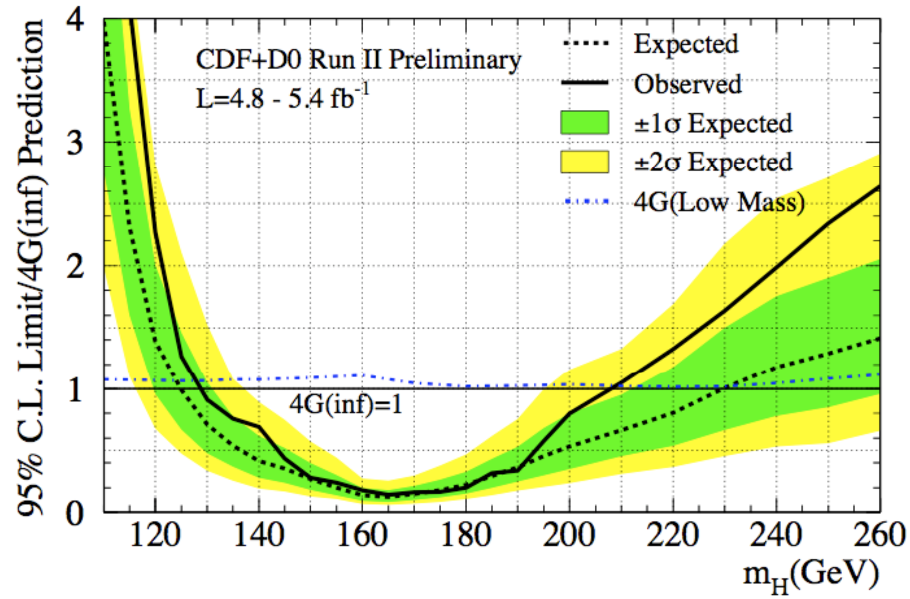
Combining CDF and D0 data, and ordering data in log(s/b):





Combined CDF and D0 limits





in 4th generation model the Higgs boson is excluded for m_H 130-210 GeV (125-230 GeV expected)

close the gap at low mass (115-120) needs 2.5 times more lumi @115 GeV for bb channels due to B.R., but improved sensitivity in H→WW should do the job (also crucial for low mass SM Higgs)

Conclusions

Many new results, but many more are coming thanks to the large luminosity delivered

We have learned to cope with high luminosity conditions, publishing > 5 fb^{-1}

Looking forward for more data in 2010, 2011, 2012.. (oops!)

Thanks to all Dzero and CDF/Tevatron Colleagues!