W(μν)Z(bb)

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- $\sigma \times BR$ (@ 7 TeV) = 18.57pb* $\times 0.11$ ($\mu\nu$)$\times 0.15$(bb) = 0.3 pb

- $\mathscr{L}$ = 4.7 fb^{-1}

- $\mathscr{L} \times \sigma \times BR$ = 1410 W($\mu\nu$)Z(bb) events

* J.Campbell, K.Ellis, C.Williams, "Vector boson pair production at the LHC" (2011)

Event Selection

variable	W(μν)Z(bb)
pt(b1)	>30
pt(b2)	>30
pt(jj)	>120
pt(W)	>120
CSV1	>0.89
CSV2	>0.4
Δφ(WH)	>2.9
pfMET	>25
pfMETsig	>2.
pt(μ)	>20
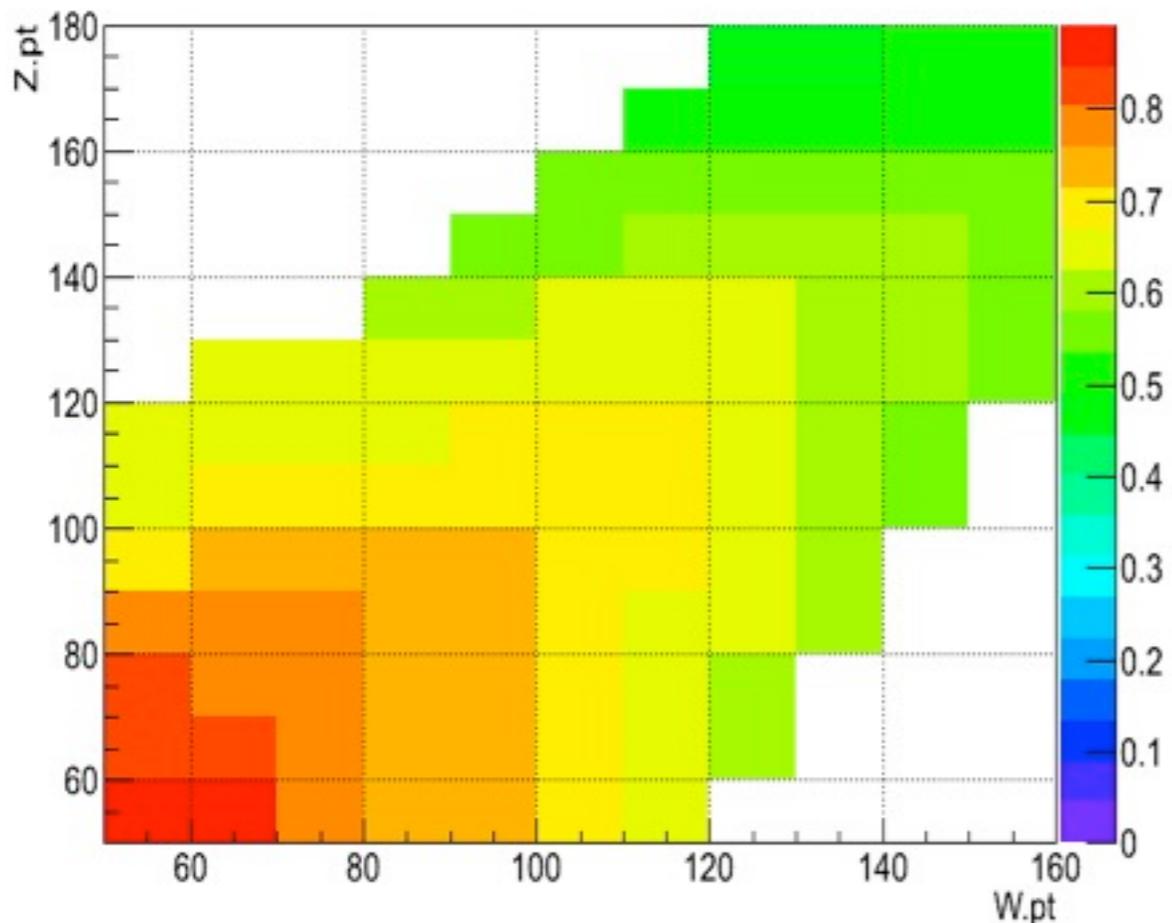
optimized against
FoM
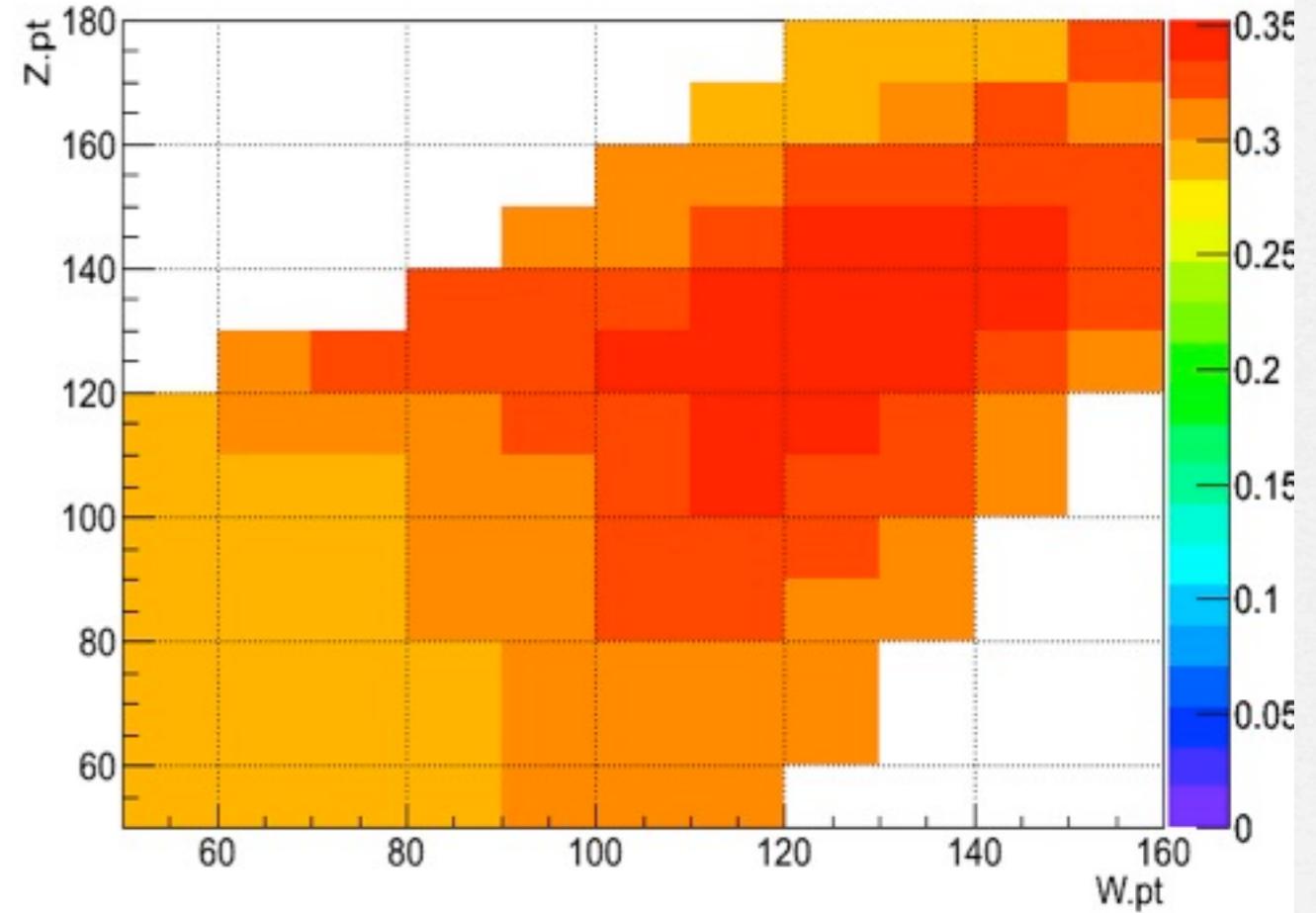
FoM = 0.67
FoM(syst)= 0.35

Boost vs FoM

Optimization of FoM = S/sqrt(S+B) wrt W/Z boost
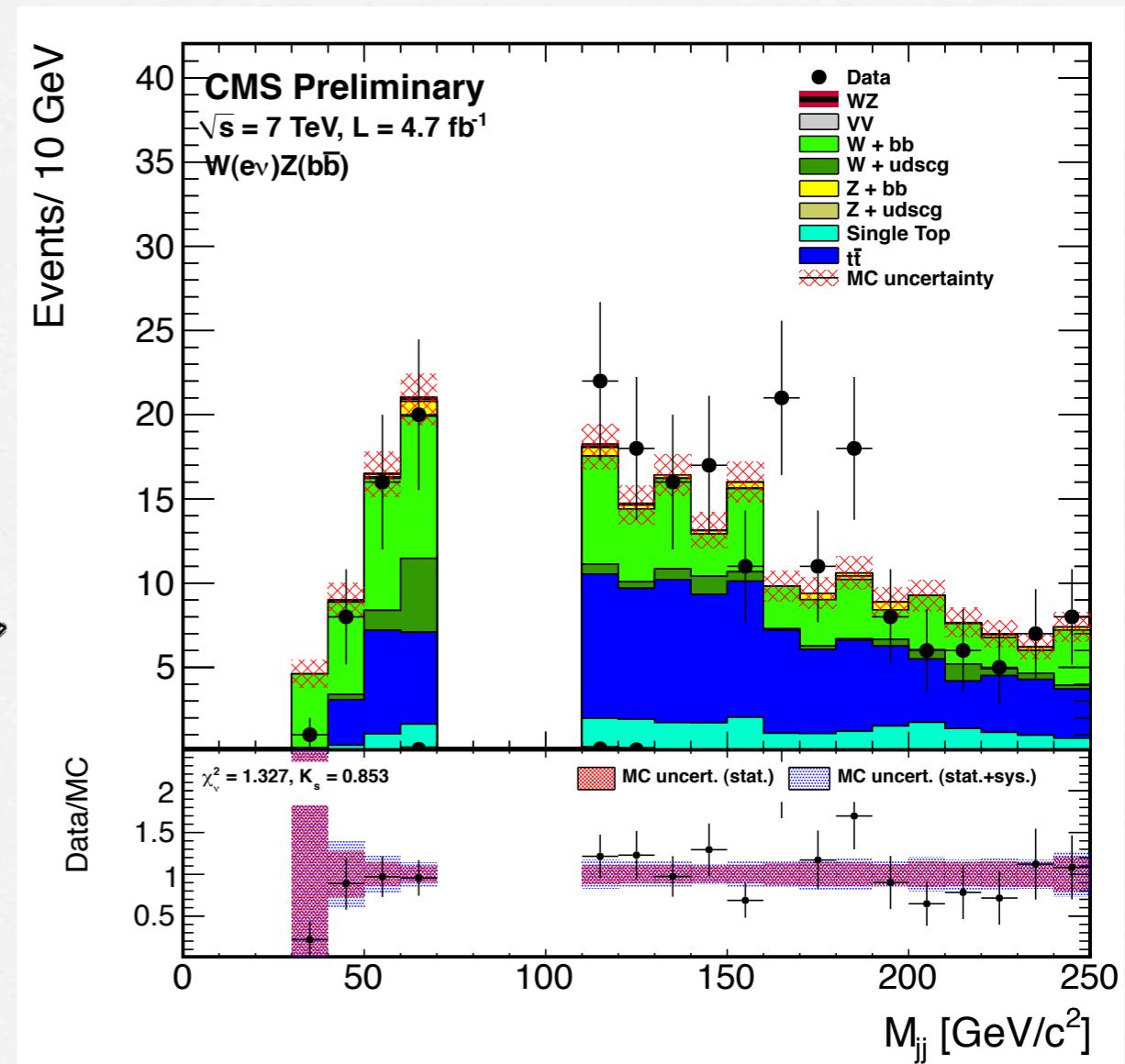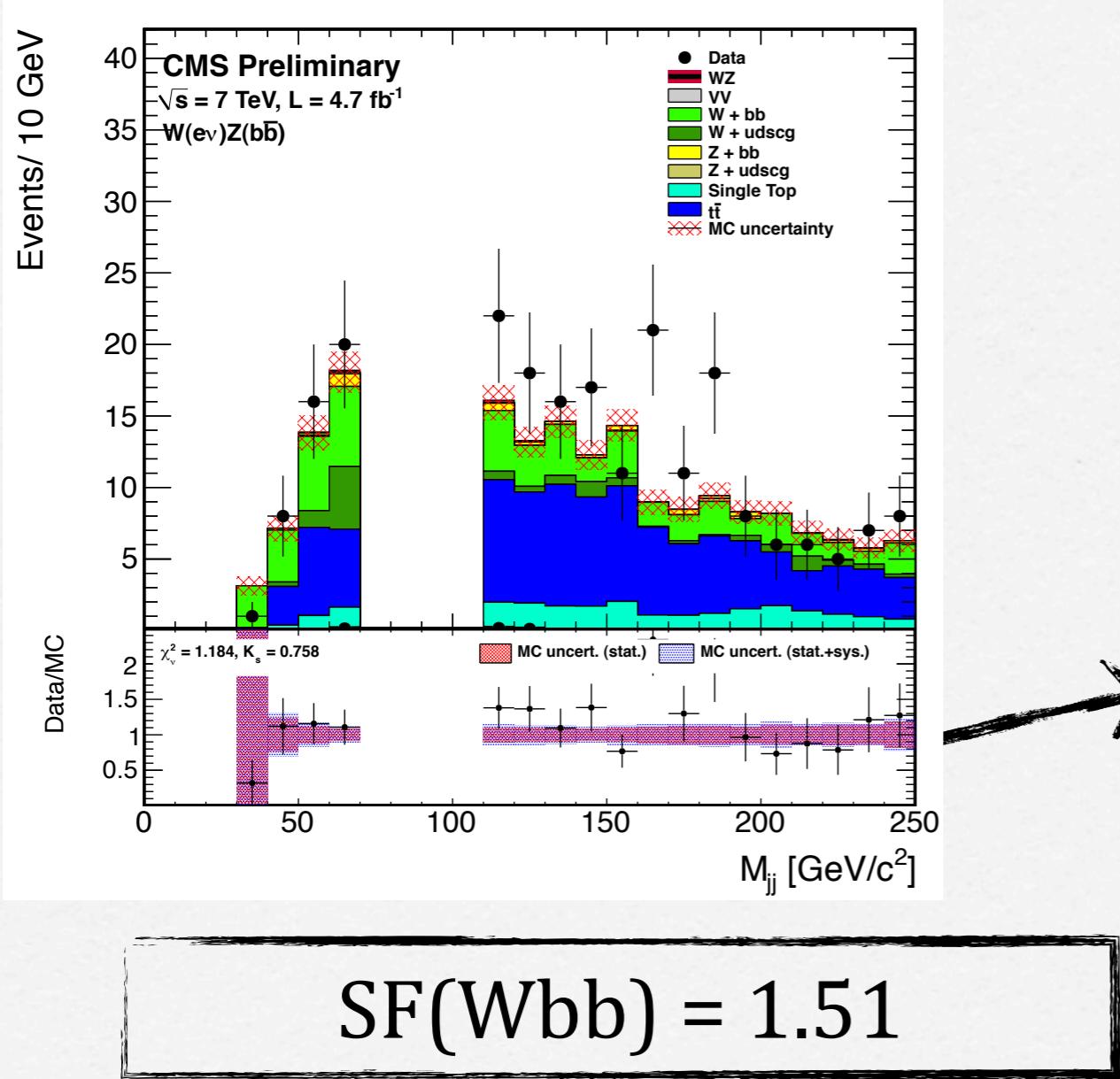
Optimization of FoM = S/ (1.5 + sqrt(B) + (0.1 * B)) wrt W/Z boost

FoM = S/sqrt(S+B)
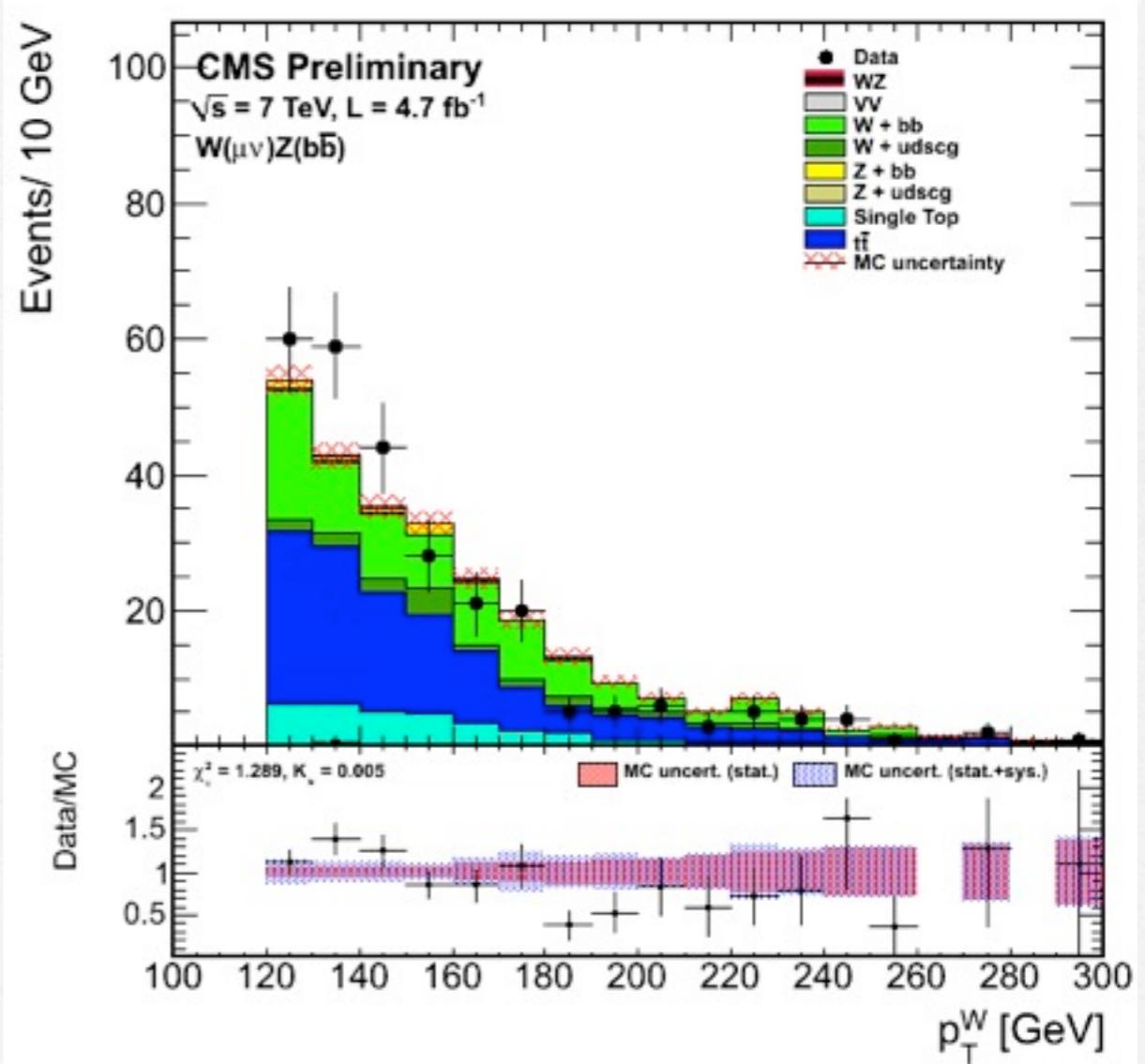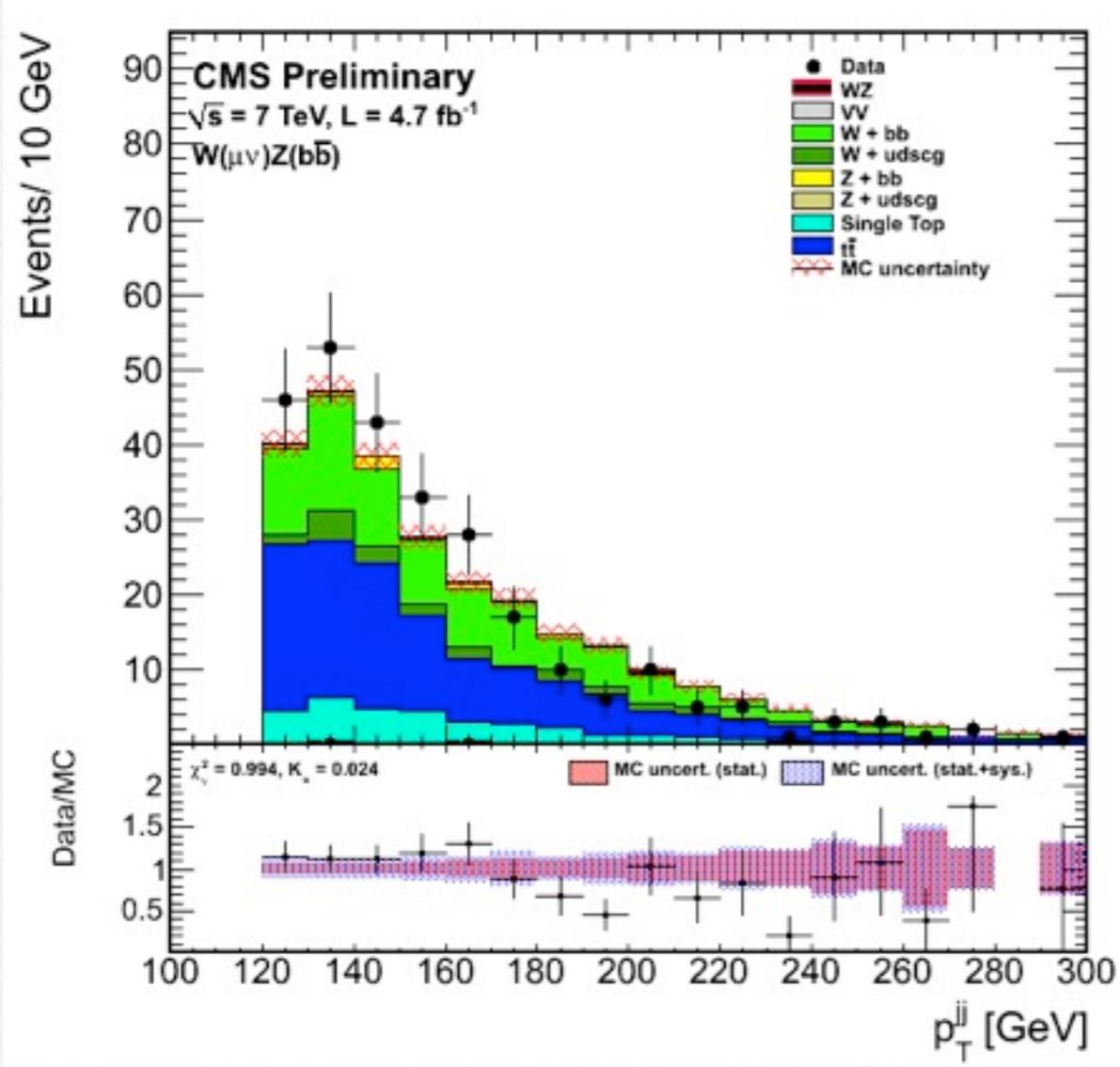
$FoM_{(syst)}$ = S/(3/2+sqrt(B)+0.1*B)

# SF(Wbb) - excluding [70,110]


SF(Wbb) = 1.51
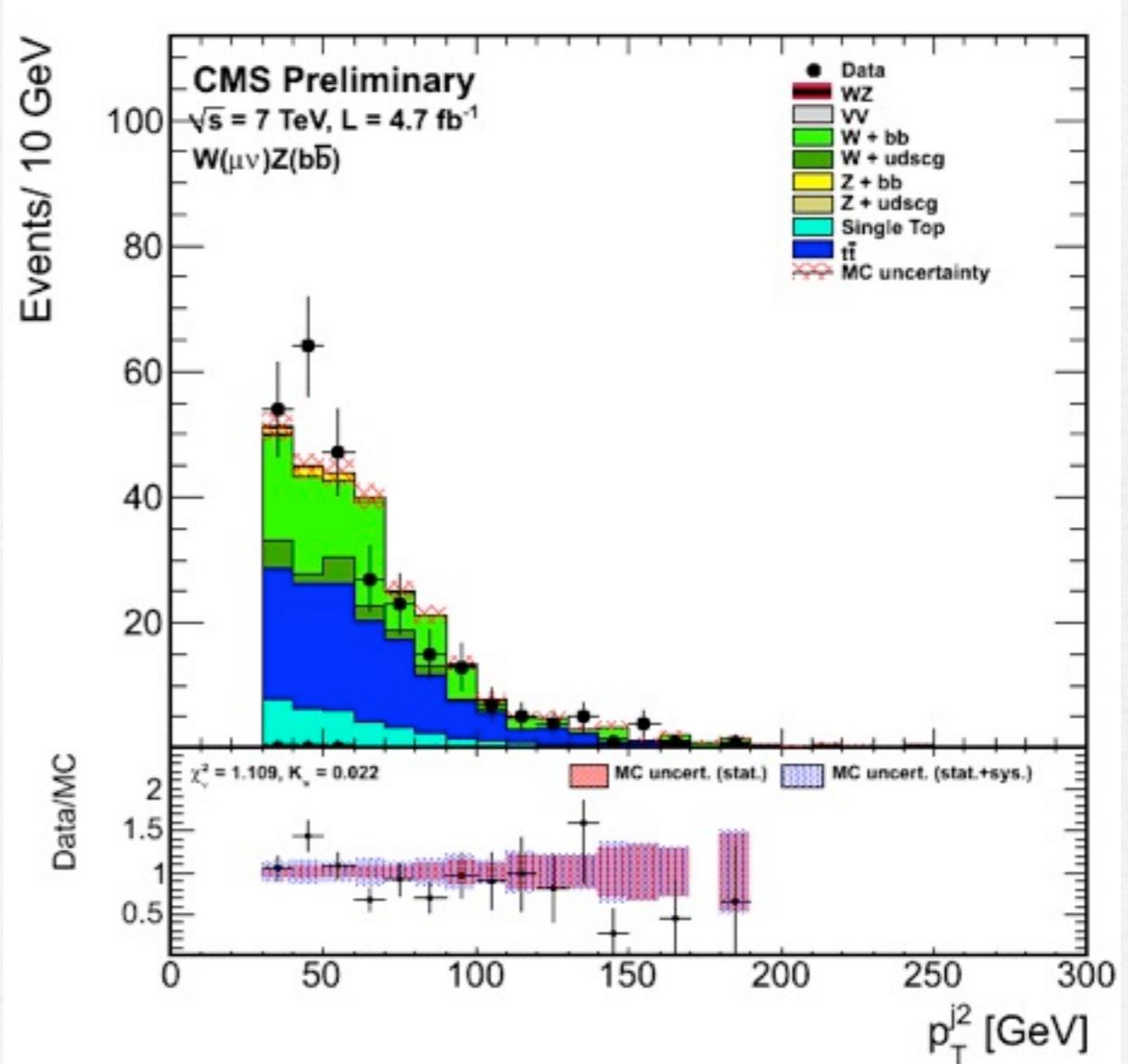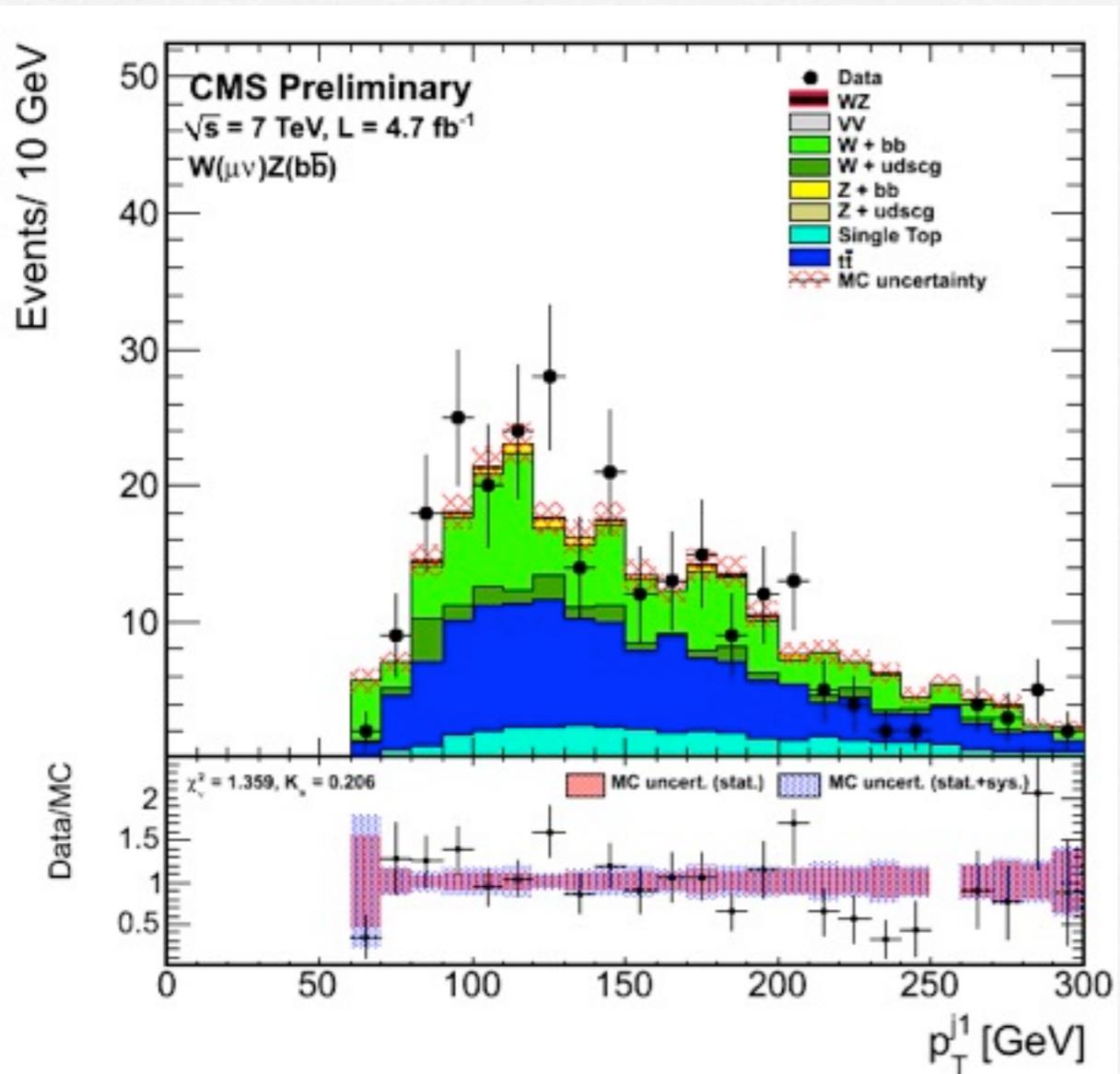
Data VS Expectation (I)

Pt(jj)

Pt(W)
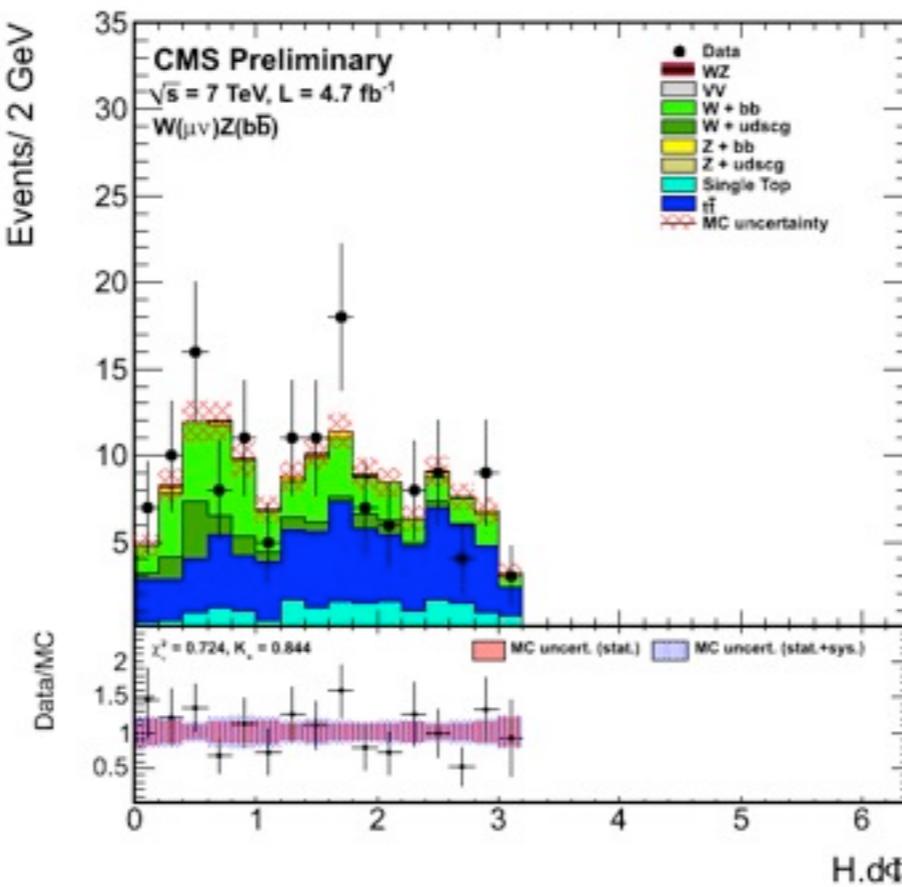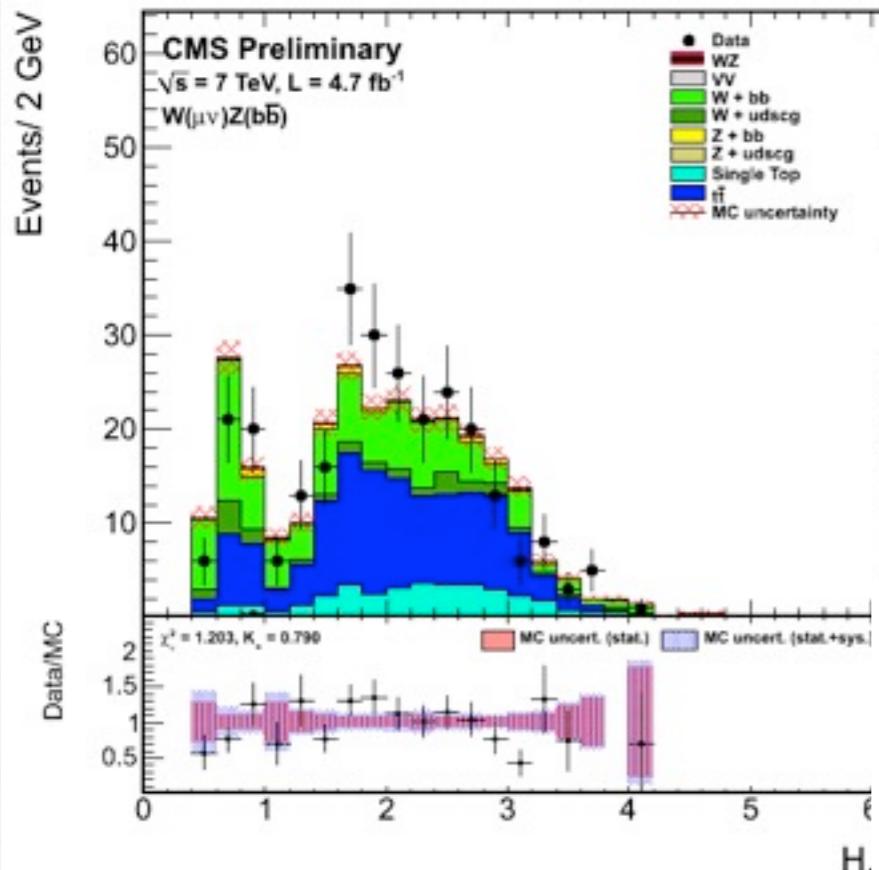
# Data VS Expectation (II)
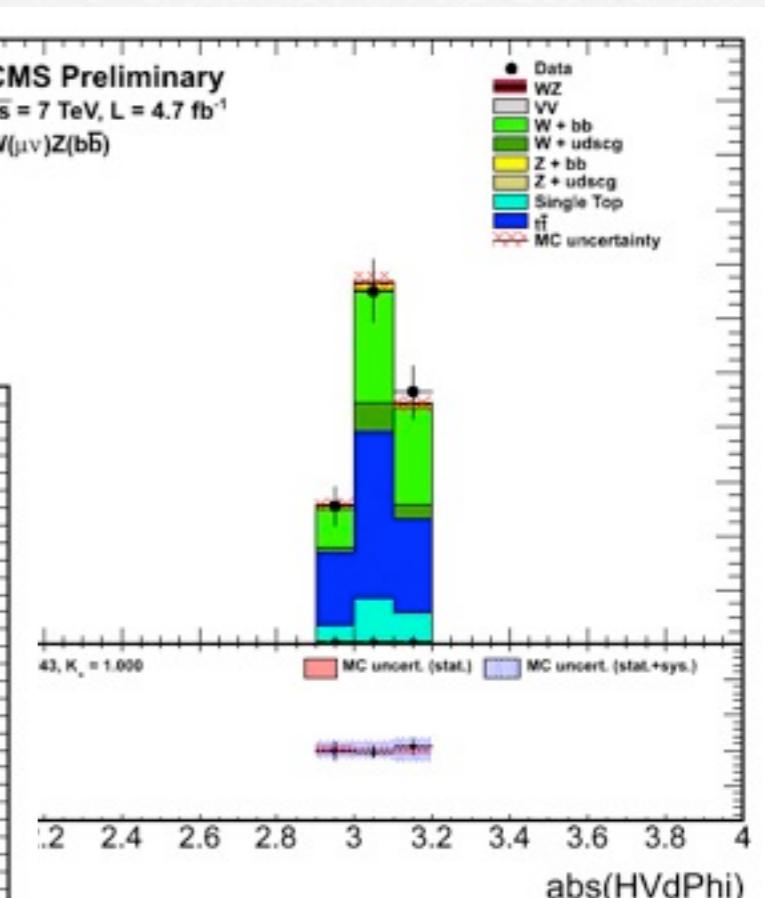
Pt(j1)

Pt(j2)

Data VS Expectation (III)

dR(jj)

dΦ(WZ)

dΦ(jj)

plan

- ☐ to improve Data VS Expectation ratio

- ☐ to investigate low $pt(jjj)$ and $pt(W)$ region

- ☐ to include $W(ev)$ channel