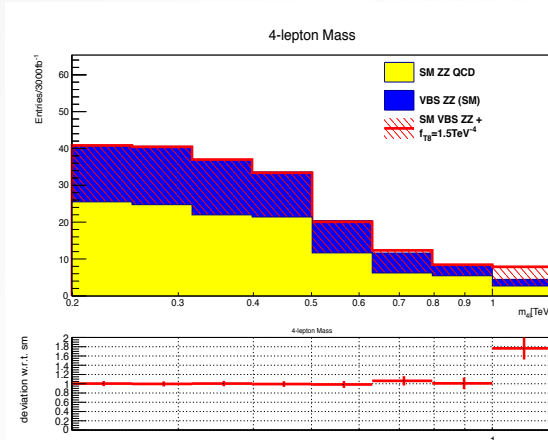


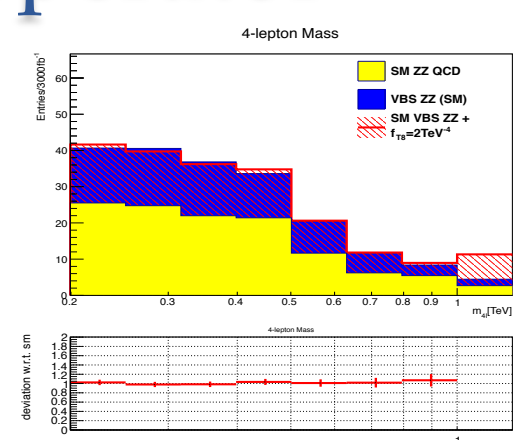
Status update

- Current results that were shown:
 - WZjj:
 - dim6: CphdL2 (14TeV, 33TeV)
 - dim8: FT1 (14TeV, 33TeV)
 - ZZjj:
 - Dim6: CphiWL2 (14TeV, 33TeV)
- WZjj 100TeV event generation is now suffering greatly from the inefficiency again
 - Olivier is recommending a new prescription, still trying...
- New updates this week:
 - ZZjj:
 - Dim8: FT8 (14TeV, 33TeV) with more promising operating points

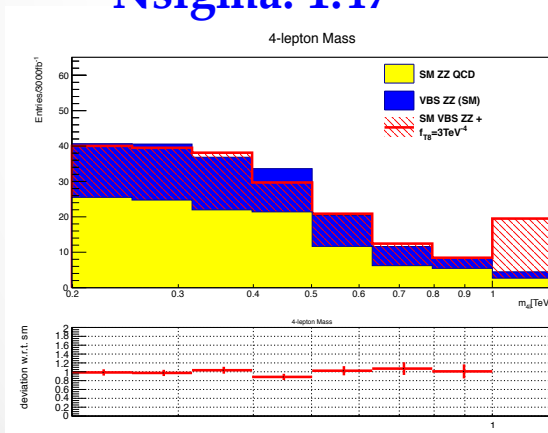
14TeV ZZjj 3ab⁻¹ m(ZZ) spectra w/ dim-8 FT8 operator



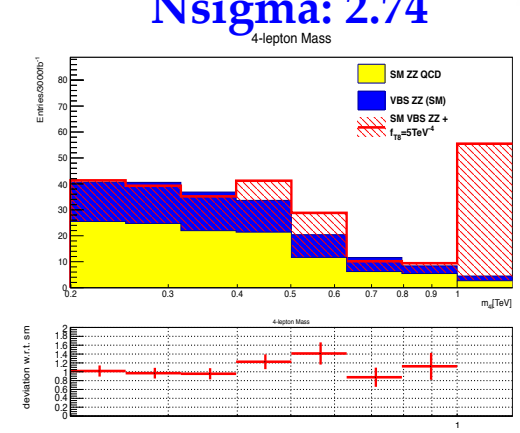
FT8=1.5
Nsigma: 1.47



FT8=2
Nsigma: 2.74



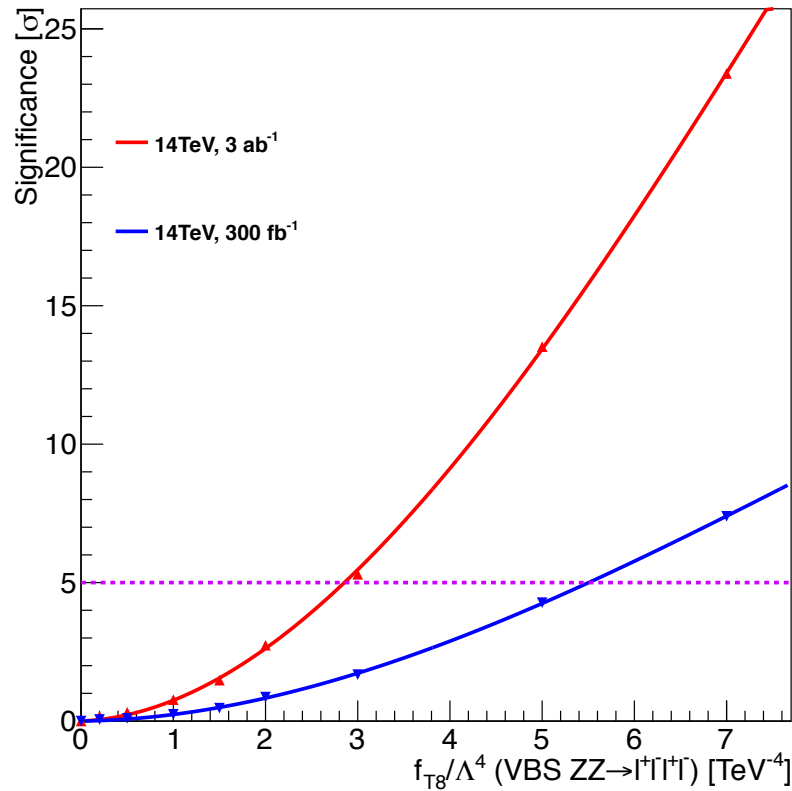
FT8=3
Nsigma: 5.30



FT8=5
Nsigma: 13.52

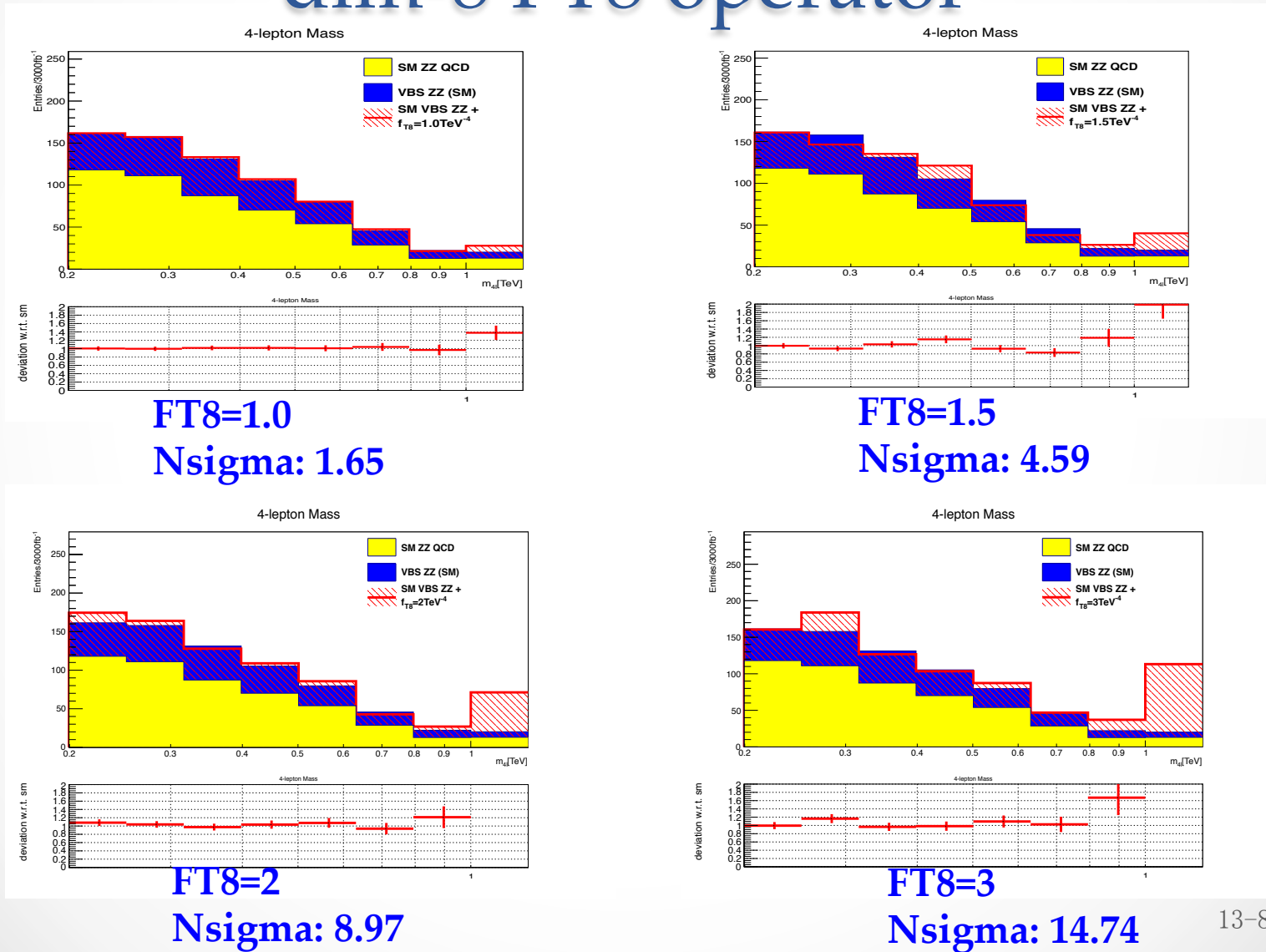
FT8 coupling with 14TeV VBS ZZjj:

Phase II 3 ab^{-1} and phase I 300 fb^{-1} comparison



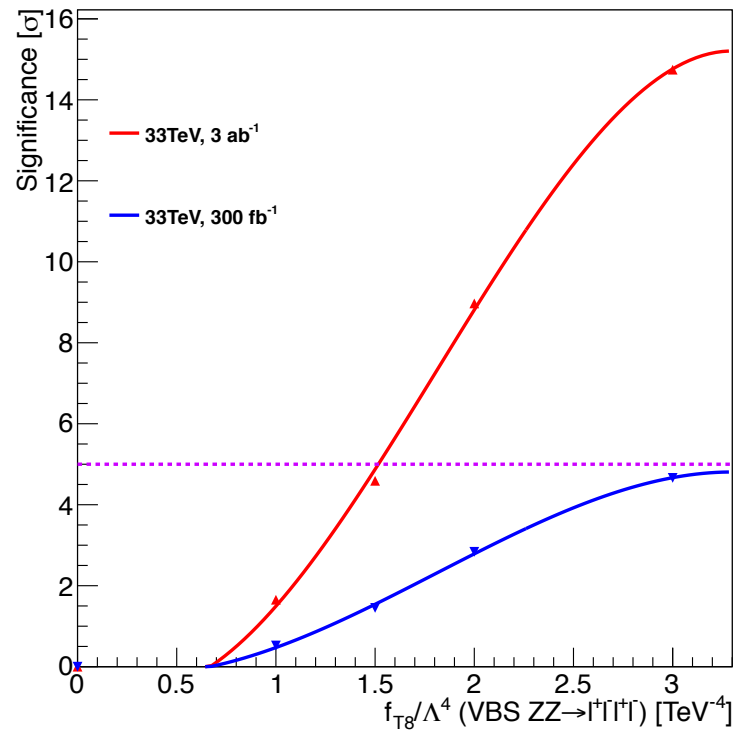
FT8 Value (VBS ZZjj)	5- σ	2- σ
300fb^{-1}	5.5	3.2
3ab^{-1}	2.9	1.7

33TeV ZZjj 3ab⁻¹ m(ZZ) spectra w/ dim-8 FT8 operator



FT8 coupling with 33TeV VBS ZZjj:

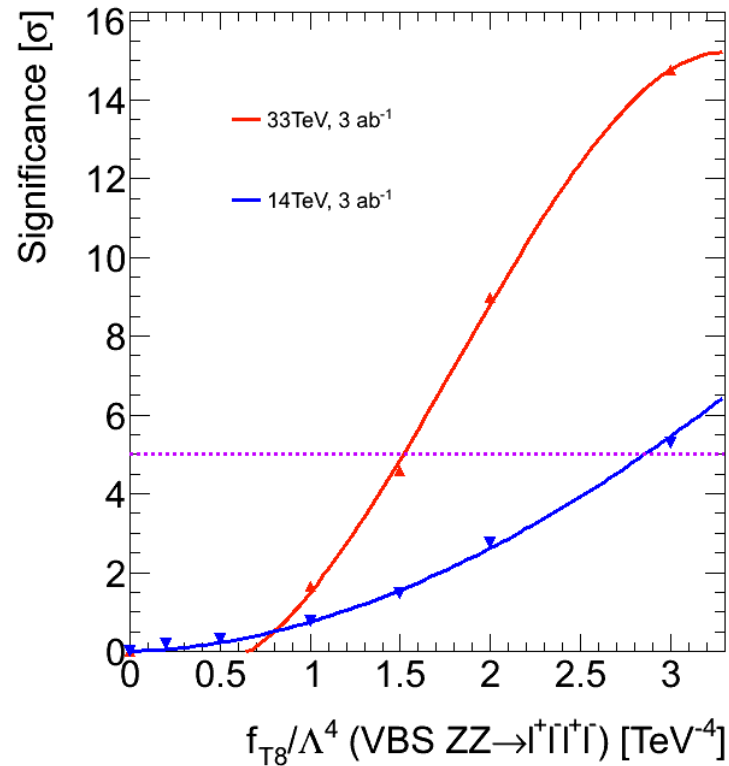
3 ab⁻¹ and 300 fb⁻¹ comparison



FT8 Value (VBS ZZjj)	5- σ	2- σ
300fb ⁻¹	3.3	1.7
3ab ⁻¹	1.5	1.1

FT8 coupling with $3ab^{-1}$ VBS ZZjj:

14TeV and 33TeV comparison

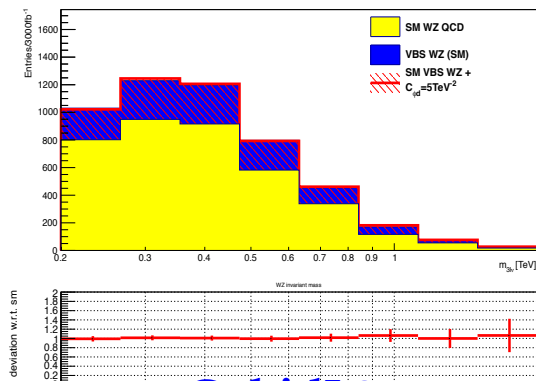


FT8 Value (VBS ZZjj)	5- σ	2- σ
14TeV	2.6	1.7
33TeV	1.2	1.0

Backup

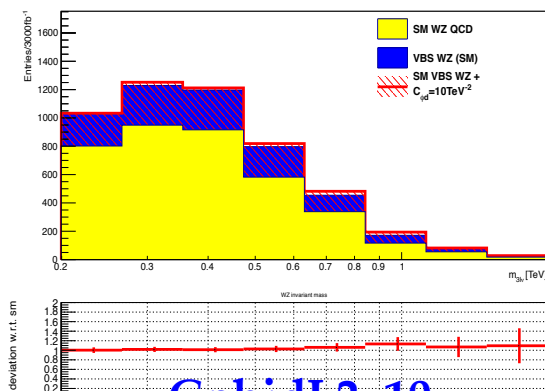
14TeV WZjj 3ab^{-1} $m(\text{WZ})$ spectra w/ dim-6 CphidL2 operator

WZ invariant mass



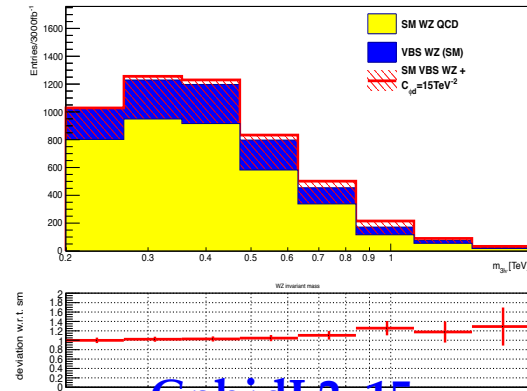
CphidL2=5
Nsigma: 1.12

WZ invariant mass



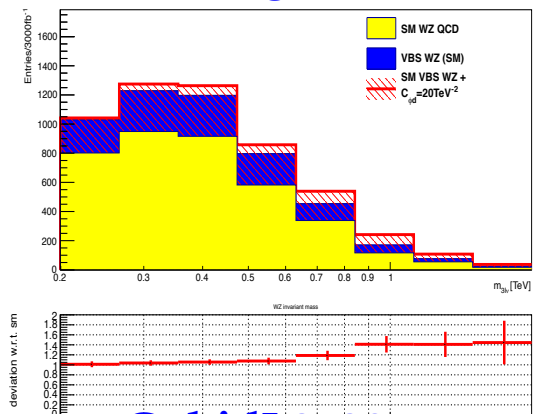
CphidL2=10
Nsigma: 2.52

WZ invariant mass



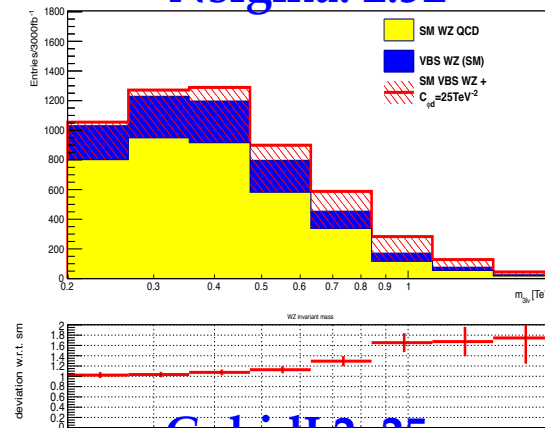
CphidL2=15
Nsigma: 4.75

WZ invariant mass



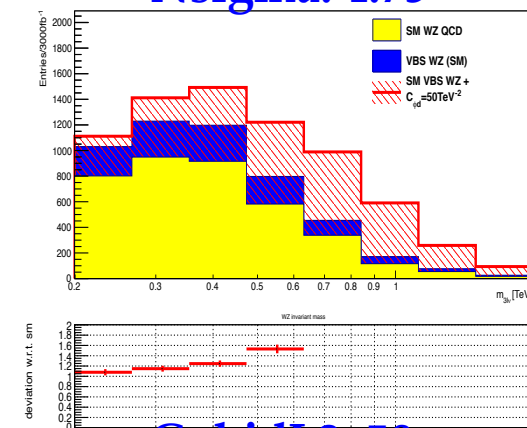
CphidL2=20
Nsigma: 8.14

WZ invariant mass



CphidL2=25
Nsigma: 12.61

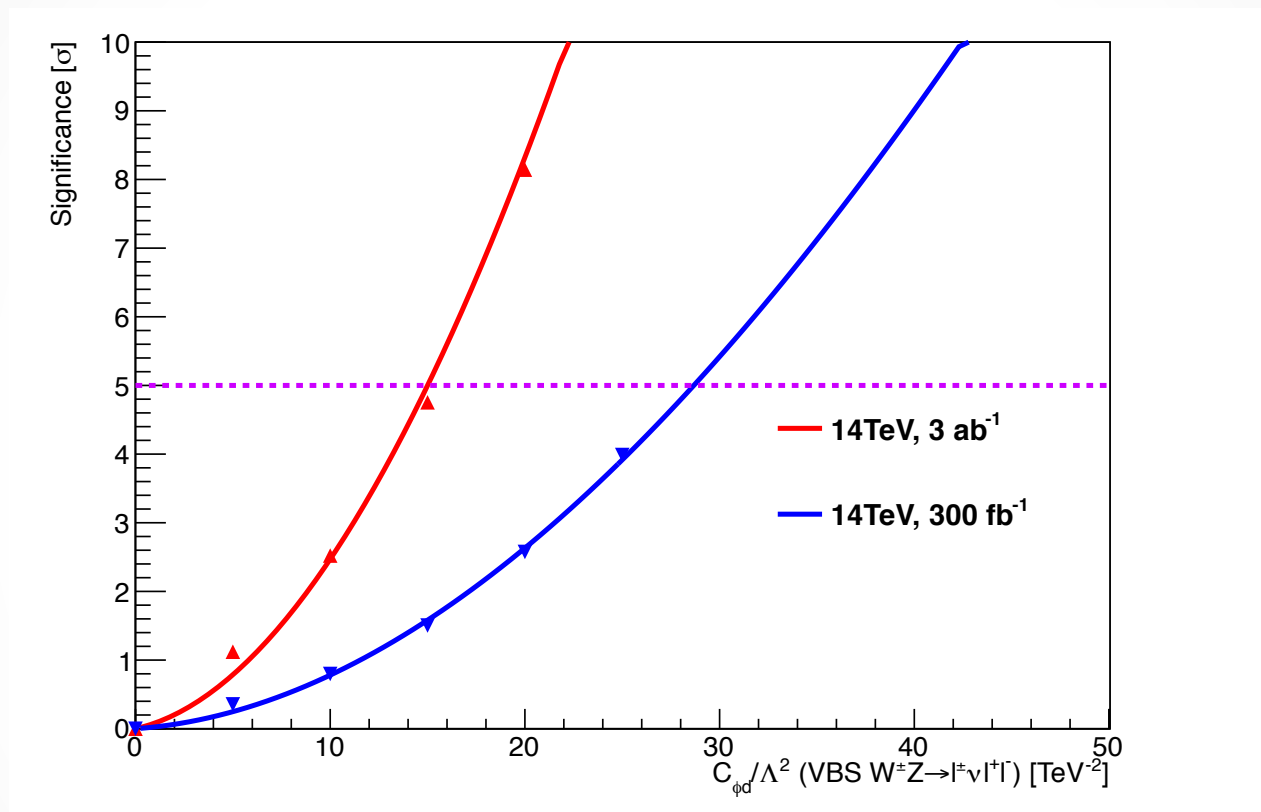
WZ invariant mass



CphidL2=50
Nsigma: 41.97

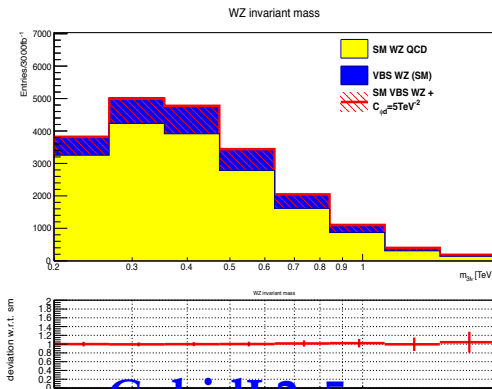
CphidL2 coupling with 14TeV VBS WZjj:

Phase II 3 ab⁻¹ and phase I 300 fb⁻¹ comparison

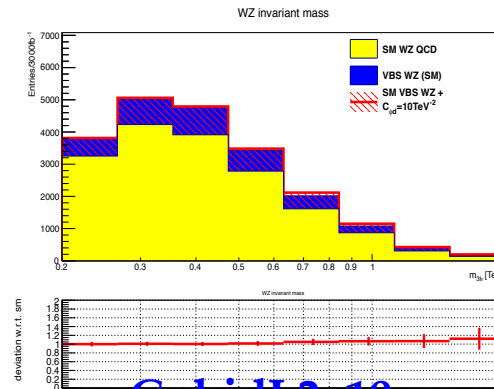


C_{ϕ_d} Value (VBS WZjj)	5- σ	2- σ
300fb ⁻¹	28.7	17.0
3ab ⁻¹	15.0	8.7

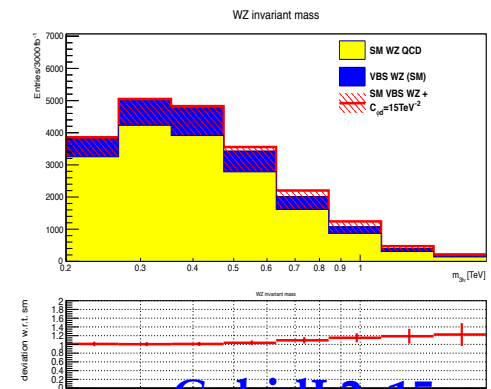
33TeV WZjj 3ab^{-1} $m(WZ)$ spectra w/ dim-6 CphidL2 operator



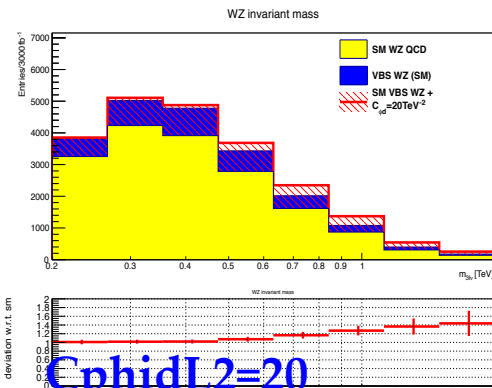
CphidL2=5
Nsigma: 1.22



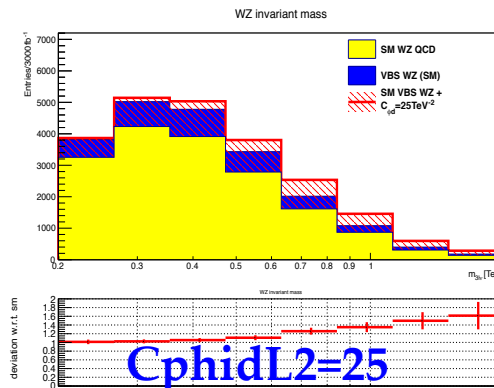
CphidL2=10
Nsigma: 3.91



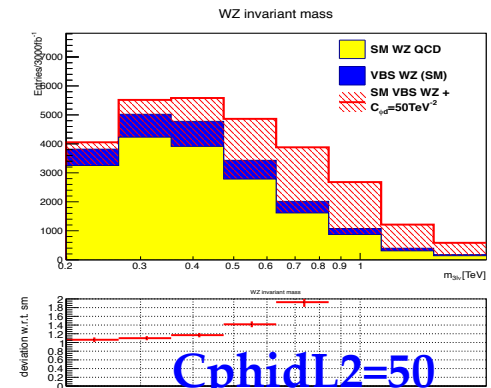
CphidL2=15
Nsigma: 8.23



CphidL2=20
Nsigma: 14.95



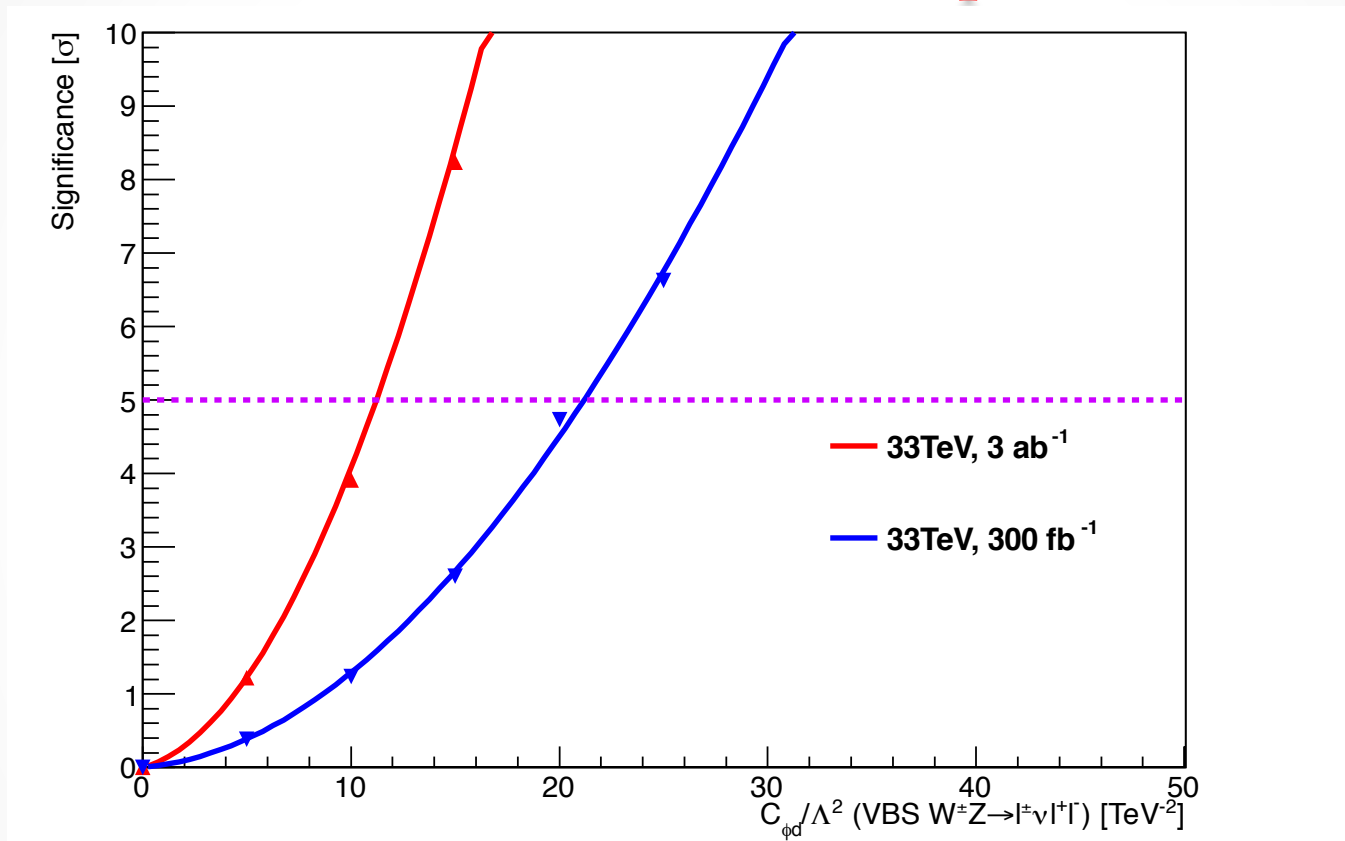
CphidL2=25
Nsigma: 20.97



CphidL2=50
Nsigma: 73.54

CphidL2 coupling with 33TeV VBS WZjj:

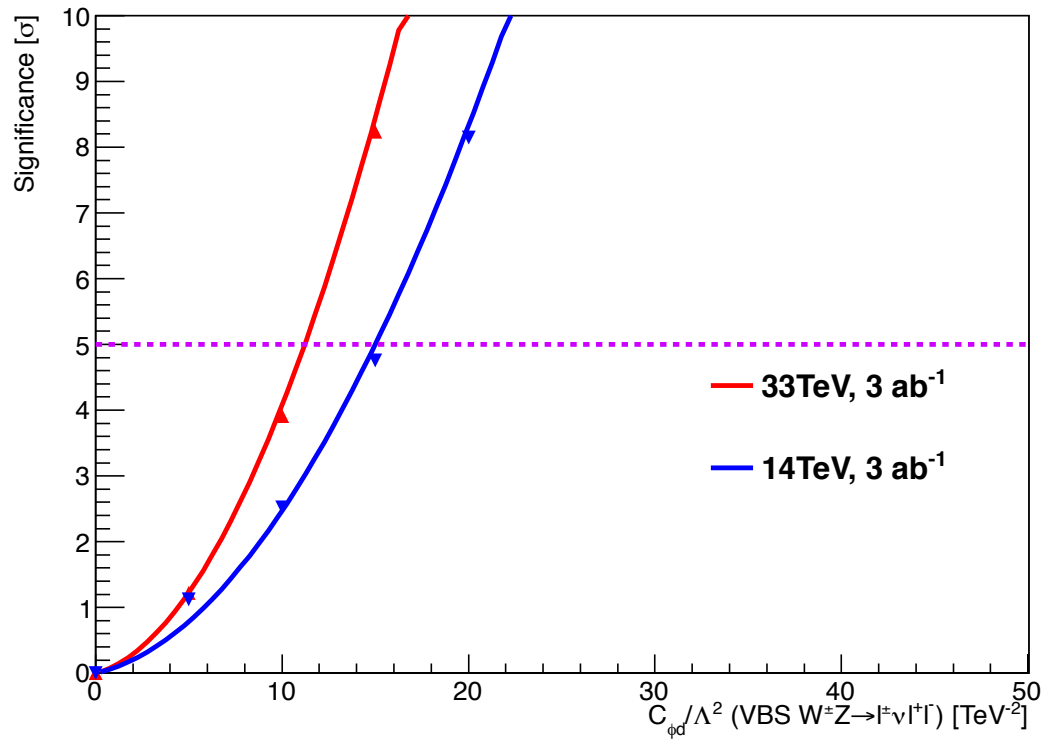
3 ab⁻¹ and 300 fb⁻¹ comparison



$C_{\phi d}$ Value (VBS WZjj)	5- σ	2- σ
300fb ⁻¹	21.2	12.6
3ab ⁻¹	11.2	6.6

C_{φd}L2 coupling with 3ab⁻¹ VBS WZjj:

14TeV and 33TeV comparison



$C_{\phi d}$ Value (VBS WZjj)	5- σ	2- σ
14TeV	15.0	8.7
33TeV	11.2	6.6

300ifb Mjj optimization

Centre-of-Mass Energy	$C_{\phi d}$ Value (VBS WZjj)	5- σ	2- σ
14TeV	Mjj>500GeV	31.2	18.6
	Mjj>750GeV	29.6	17.7
	Mjj>1TeV	28.7	17.0
	Mjj>1.25TeV	28.5	16.5
	Mjj>1.5TeV	29.2	17.2
33TeV	Mjj>500GeV	22.7	13.5
	Mjj>750GeV	21.6	12.9
	Mjj>1TeV	21.2	12.6
	Mjj>1.25TeV	21.0	12.5
	Mjj>1.5TeV	21.3	12.9

3000ifb Mjj optimization

Centre-of-Mass Energy	$C_{\phi d}$ Value (VBS WZjj)	5- σ	2- σ
14TeV	Mjj>500GeV	16.5	9.5
	Mjj>750GeV	15.7	9.3
	Mjj>1TeV	15.0	8.7
	Mjj>1.25TeV	14.5	8.2
	Mjj>1.5TeV	15.3	9.0
33TeV	Mjj>500GeV	11.9	6.9
	Mjj>750GeV	11.4	6.6
	Mjj>1TeV	11.2	6.6
	Mjj>1.25TeV	11.1	6.4
	Mjj>1.5TeV	11.5	7.1

FT9 coupling with 14TeV VBS ZZjj:

Phase II 3 ab⁻¹ and phase I 300 fb⁻¹ comparison

FT9 Value (VBS ZZjj)	5- σ	2- σ
300fb ⁻¹	4.1	3.2
3ab ⁻¹	3.1	2.5

FT9 coupling with 33TeV VBS ZZjj:

3 ab⁻¹ and 300 fb⁻¹ comparison

FT9 Value (VBS ZZjj)	5- σ	2- σ
300fb ⁻¹	3.8	3.0
3ab ⁻¹	2.8	2.2

FT9 coupling with 3ab^{-1} VBS ZZjj:

14TeV and 33TeV comparison

FT9 Value (VBS ZZjj)	5- σ	2- σ
14TeV	3.1	2.5
33TeV	2.8	2.2