

Department of Physics, Shandong University

$Z \rightarrow \tau\tau$ modeling C1N2ISR, had-had channel

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Jun 26, 2025

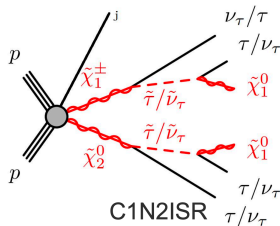
HH channel Selection

Selection

- $nTaus \geq 2$
- $nBaseLeps = 0$
- pass MET trigger; $MET \geq 200$
- $1 \leq nBaseJet$
- b-veto
- OS
- jet $pt > 100\text{GeV}$
- $40 \leq reco M_{tt} \leq 130$

Run 2 includes the 1516, 17 and 18 samples.

Run 3 includes the 22 and 23 samples.

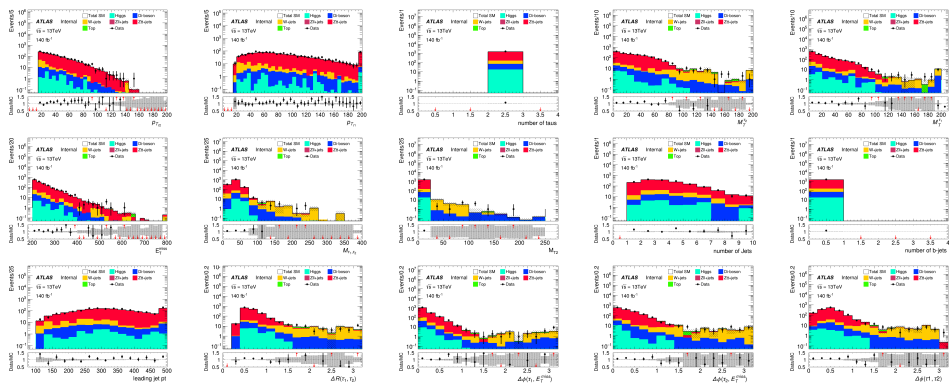


Yield Comparison: Run2 vs Run3

Type	dsid	Sample
Z+jets	700792-700794, 700901-700903 700360(only for run2)	Sh_2214_Ztautau_maxHTpTV2 Sh_2211_Ztt2jets_Min_N_TChannel

Process	Run2 Yields	Run3 Yields
Wjets	89.0 ± 12.0	50.33 ± 3.44
Zlljets	0.07 ± 0.04	0.06 ± 0.02
Zttjets	1323.75 ± 5.92	468.88 ± 3.11
VV	49.77 ± 0.81	20.49 ± 0.36
Top	25.35 ± 1.91	13.71 ± 1.12
Higgs	16.5 ± 3.28	–
dijet	24.03 ± 22.32	0.48 ± 0.37
bkg wo dijet	1504.44 ± 13.93	553.47 ± 4.79
bkg	1528.46 ± 26.31	553.95 ± 4.80
data	1635.0 ± 40.44	712.0 ± 26.68
Ztt purity (wo dijet)	0.88	0.85

Kinematic plots, run2



Kinematic plots, run3

