

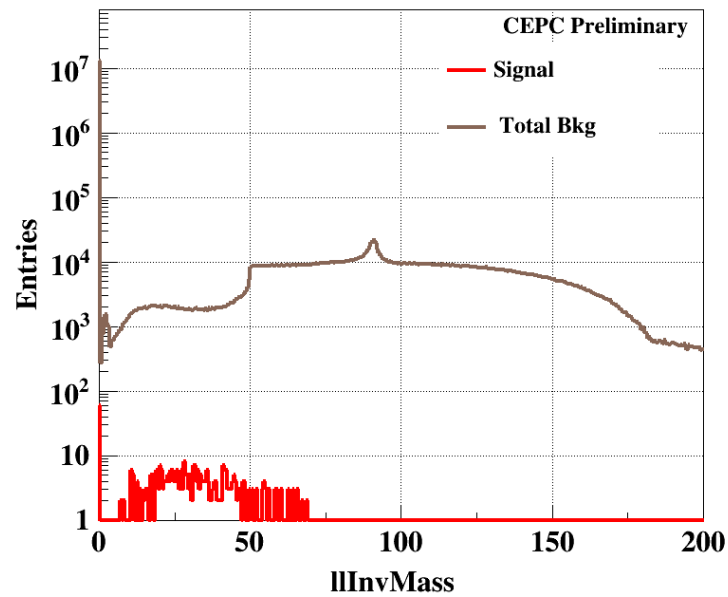
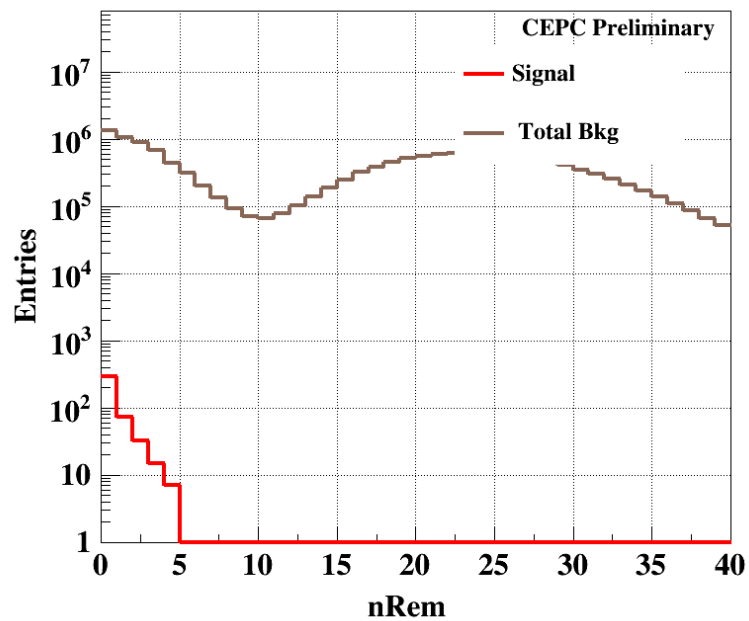
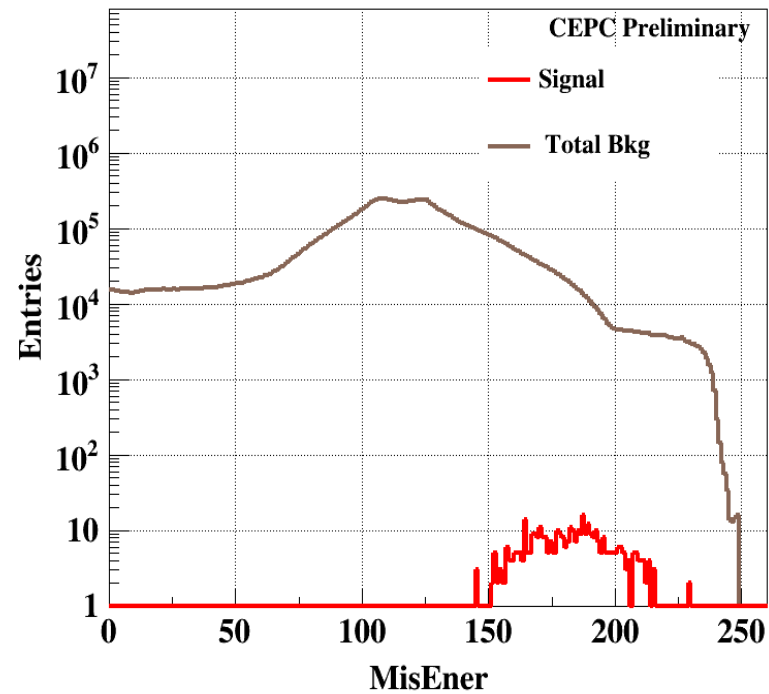
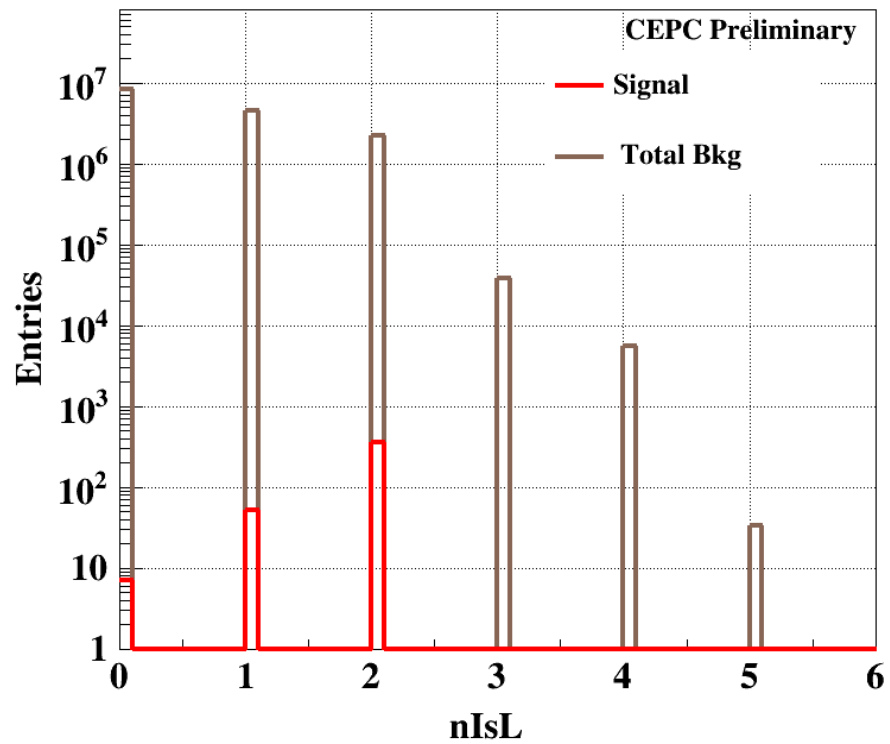
$$e^+ e^- \rightarrow Z^* H \rightarrow \nu \bar{\nu} W W^* \rightarrow \nu \bar{\nu} l^+ l^- \nu \quad (l = e, \mu)$$

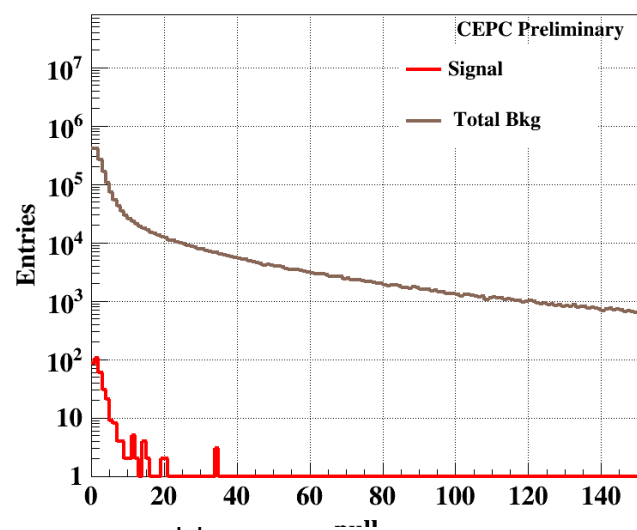
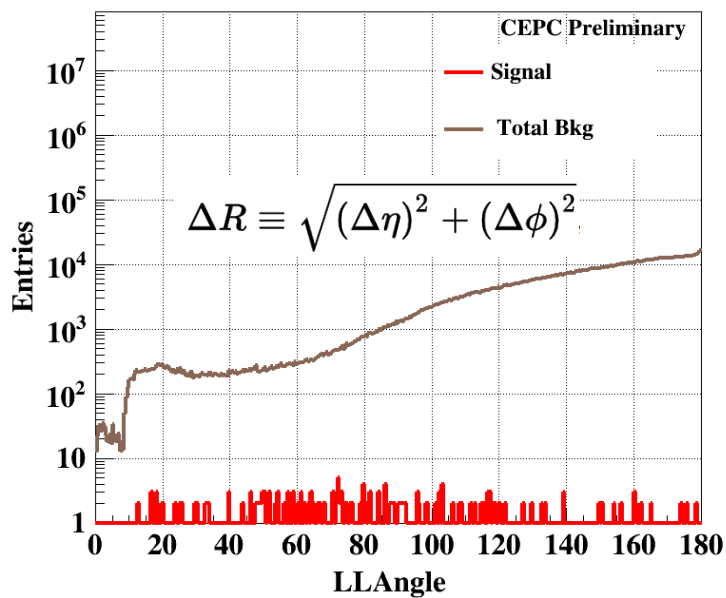
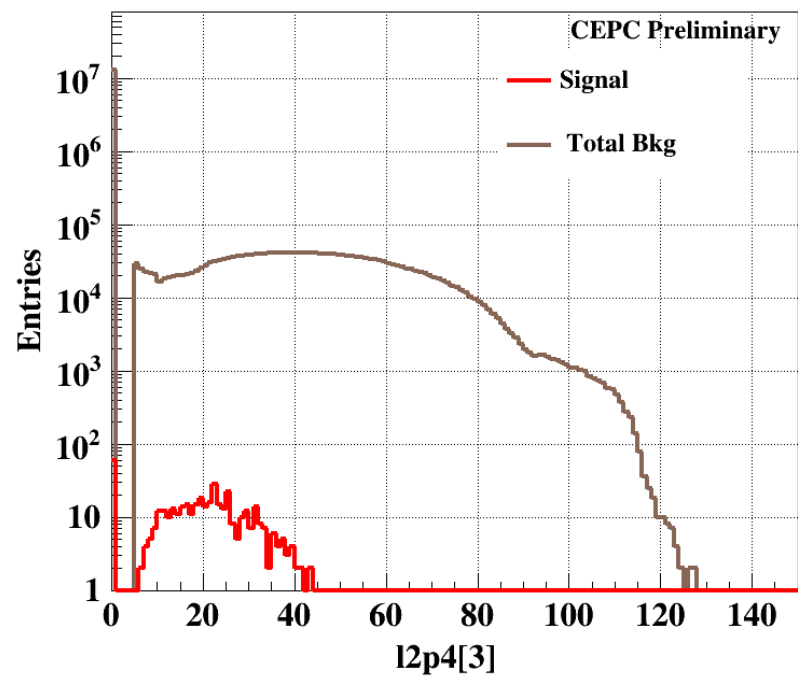
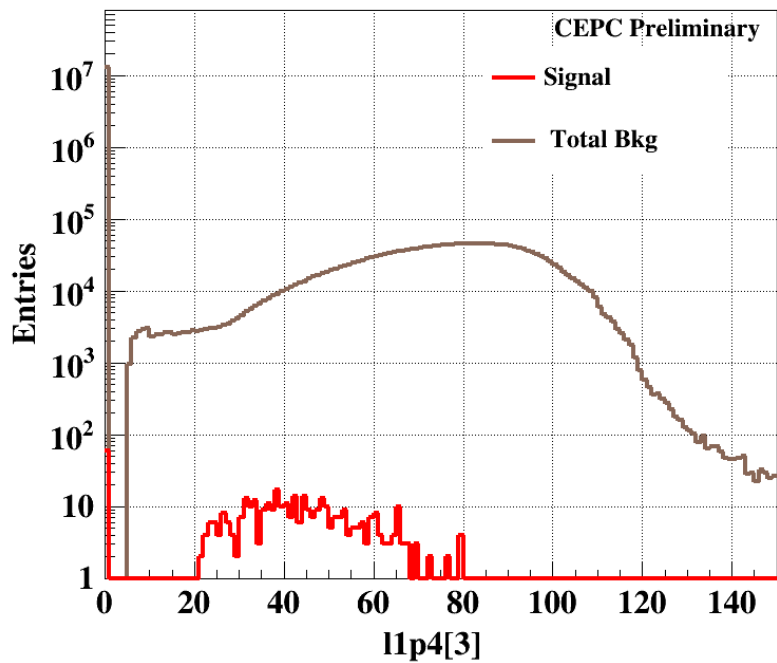
Xianke.He

2017-8-28

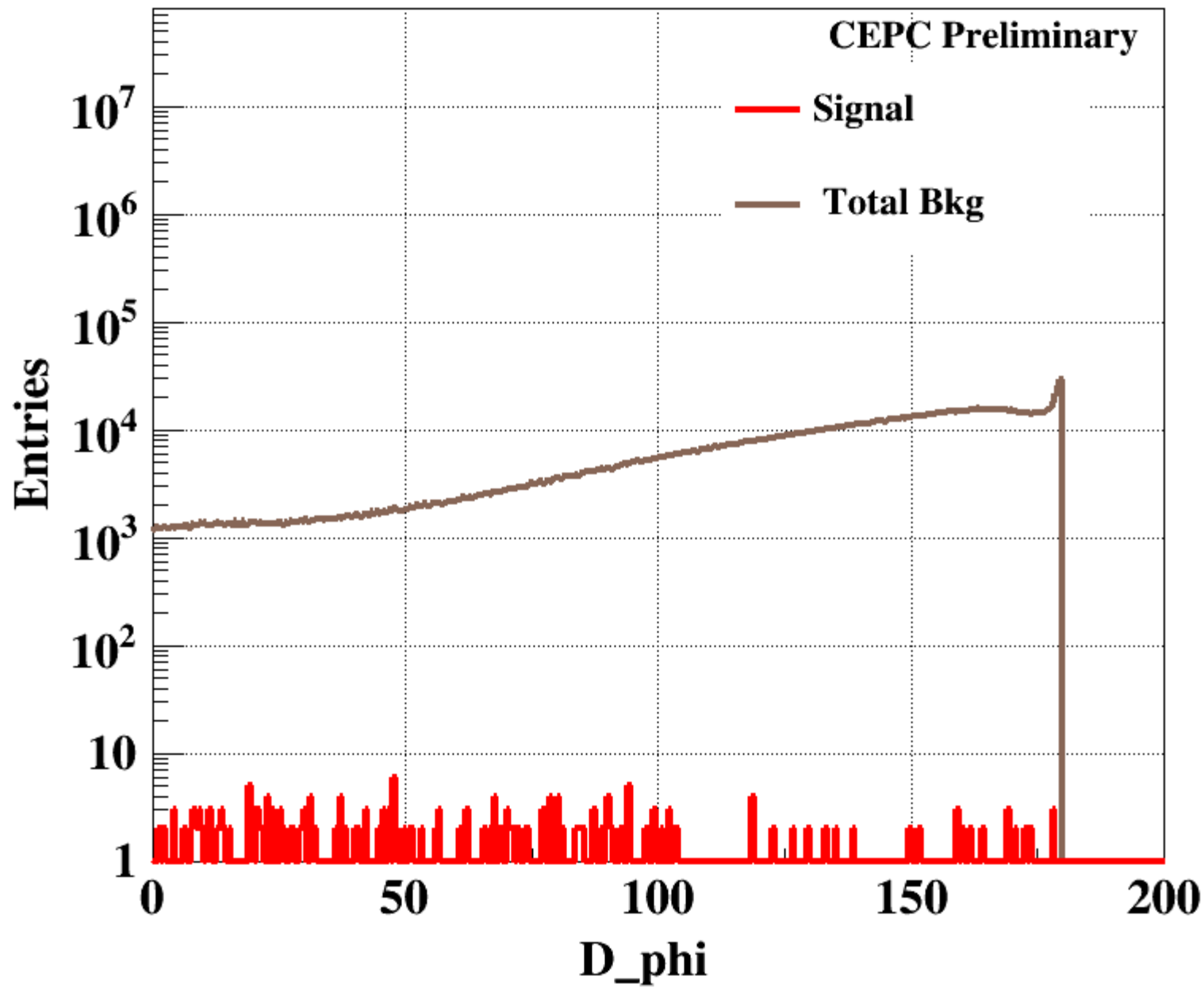
Data Path:

/cefs/tmp_storage/liaolb/Arbor_3.3/
nnH_filter/background/RecData





$$\text{pull} = \sqrt{\left(\frac{\text{trkD0}^2}{\text{sigD0}^2} + \frac{\text{trcZ0}^2}{\text{sigZ0}^2}\right) \cdot \left(\frac{\text{trkD1}^2}{\text{sigD1}^2} + \frac{\text{trcD0}^2}{\text{sigZ1}^2}\right)}$$



$e^+e^- \rightarrow$	<i>signal</i>	<i>sznu_l</i>	<i>sze_sl</i>	<i>zz_h</i>	<i>ww_h</i>
Total	2480	58852	12599	10109	42303
$nIsL == 2$	1042	578	144	91	36
$140\text{GeV} < MisEner < 225\text{GeV}$	1038	484	0	0	0
$nRem < 4$	1037	463	0	0	0
$5\text{GeV} < llInvMass < 70\text{GeV}$	1037	461	0	0	0
$20\text{GeV} < l1p4[3] < 80\text{GeV}$	1024	433	0	0	0
$10\text{GeV} < l2p4[3] < 40\text{GeV}$	929	390	0	0	0
$\Delta R < 100$	538	17	0	0	0
$pull < 70$	535	9	20	0	0
$\Delta\phi < 80$	495	6	18	03	0

$e^+e^- \rightarrow$	<i>ww_l</i>	<i>szeorsw_l</i>	<i>sze_l</i>	<i>e2e2</i>	<i>zz_l</i>
Total	886210	420854	118574	42939	113442
$nIsL == 2$	138900	1	2894	42105	7856
$140\text{GeV} < MisEner < 225\text{GeV}$	54848	0	87	35147	3094
$nRem < 4$	54249	0	39	33803	1214
$5\text{GeV} < llInvMass < 70\text{GeV}$	54245	0	38	33785	1200
$20\text{GeV} < l1p4[3] < 80\text{GeV}$	54298	0	27	30954	1042
$10\text{GeV} < l2p4[3] < 40\text{GeV}$	35119	0	17	27425	827
$\Delta R < 100$	908	0	1	853	56
$pull < 70$	808	0	1	327	24
$\Delta\phi < 80$	590	0	1	268	19

$e^+e^- \rightarrow$	zz_sl	$zzorww_h$	$zzorww_l$	sw_l	$e3e3$
Total	733013	35594	650454	1.53246×10^6	425110
$nIsL == 2$	6618	32	17231	702537	23576
$140\text{GeV} < MisEner < 225\text{GeV}$	325	0	13652	198794	12685
$nRem < 4$	0	0	13392	198446	12483
$5\text{GeV} < llInvMass < 70\text{GeV}$	0	0	13384	198445	12477
$20\text{GeV} < l1p4[3] < 80\text{GeV}$	0	0	12819	183474	11109
$10\text{GeV} < l2p4[3] < 40\text{GeV}$	0	0	11024	138118	9544
$\Delta R < 100$	0	0	92	8804	10
$pull < 70$	0	0	33	8619	1
$\Delta\phi < 80$	0	0	21	5944	1

$e^+e^- \rightarrow$	nn	qq	$sznu_sl$	ww_sl	sw_sl
Total	649303	$3.84418 * 6$	541380	3.94811×10^{10}	652741
$nIsL == 2$	0	5245	403	22713	7647
$140\text{GeV} < MisEner < 225\text{GeV}$	0	1440	229	666	190
$nRem < 4$	0	0	1	0	0
$5\text{GeV} < llInvMass < 70\text{GeV}$	0	0	1	0	0
$20\text{GeV} < l1p4[3] < 80\text{GeV}$	0	0	1	0	0
$10\text{GeV} < l2p4[3] < 40\text{GeV}$	0	0	0	0	0
$\Delta R < 100$	0	0	0	0	0
$pull < 70$	0	0	0	0	0
$\Delta\phi < 80$	0	0	0	0	0

bhabha(notwholebkg)

340187

3

0

0

0

0

0

0

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0

backup

$e^+e^- \rightarrow$	signal $l\nu l\nu$	ww_l0ll $\mu, \tau, \nu_\mu, \nu_\tau$	zz_l04tau $\tau^-, \tau^+, \tau^-, \tau^+$	zz_tautau $\nu_\mu, \bar{\nu}_\mu, \tau^-, \tau^+$	zz_l0taumu $\mu^-, \mu^+, \tau^-, \tau^+$
Total	2480	1982800	99800	1038390	100000
$nIsL == 2$	1042	227189	8311	42105	5000
$140\text{GeV} < MisEner < 225\text{GeV}$	1038	95373	3248	35147	1652
$nRem < 4$	1037	94265	953	33803	1197
$5\text{GeV} < llInvMass < 70\text{GeV}$	1037	94221	952	33785	1195
$20\text{GeV} < l1p4[3] < 80\text{GeV}$	1024	79714	794	30954	1069
$10\text{GeV} < l2p4[3] < 40\text{GeV}$	929	68408	721	27425	937
$\Delta R < 100$	538	7041	65	853	39
$vertex < 70$	535	6302	20	327	34
$\Delta\phi < 80$	495	5210	18	268	27

$e^+e^- \rightarrow$	sznu_0tautau $\nu_e, \bar{\nu}_e, \tau^-, \tau^+$	sw_l0mu e, ν_e, μ, ν_μ	sw_l0tau e, ν_e, τ, ν_τ	zzorww_l0tautau $\tau^-, \tau^+, \nu_\tau, \nu_\tau$	zhbkg $\nu\nu H(\rightarrow XX)$
Total	99600	2148850	110000	1038390	239990
$nIsL == 2$	1946	1457200	13072	42105	1722
$140\text{GeV} < MisEner < 225\text{GeV}$	1876	271396	5627	35147	1250
$nRem < 4$	1791	270378	5507	33803	899
$5\text{GeV} < llInvMass < 70\text{GeV}$	1777	270333	5503	33785	896
$20\text{GeV} < l1p4[3] < 80\text{GeV}$	1532	260307	4910	30954	802
$10\text{GeV} < l2p4[3] < 40\text{GeV}$	1392	217198	4374	27425	561
$\Delta R < 100$	137	59485	536	853	98
$vertex < 70$	53	59233	446	327	83
$\Delta\phi < 80$	42	50446	375	268	73