

Observed and Expected Limit Studies with PHX Electron (W.-M. Yao)

The limits are calculated using the standard Bayesian procedure with pseudo-data generated from the input provided by Thomas and Yoshikazu. The expected is the mean of pseudo-experiments.

Systematic:

Source (%)	KA Single	KA Doub	STST	STJP
Lum	6	6	6	6
btag	4.3	10	8	9
ID	2	2	2	2
JES	1	1	1	1
ISR/FSR	5	5	5	5
Mistag	14	14	18	16
QCD	40	40	40	40
W+HF	35	35	35	35
Top	20	20	15	15
Diboson	11	11	10	10

Phex Expected Limits:

	No Systematic				With Systematic			
mH (GeV)	110	115	120	130	110	115	120	130
KA one tag	39.6	44.6	55.8	86.8	46.9	51.3	64.5	97.7
KA two tags	57.3	57.1	72.0	106.0	63.1	61.2	78.3	114.1
KA combined	30.8	32.4	40.9	61.4	35.2	37.1	46.3	69.0
STST	56.6	57.8	71.9	108.3	61.4	62.5	78.1	113.7
STJP	78.1	81.8	107.7	165.0	84.1	89.8	113.1	167.3
ST+NNtag	54.5	69.5	82.6	137.0	65.4	85.1	99.9	156.9
Combined	30.3	33.9	41.6	63.8	34.0	38.5	47.1	72.5

New Trigger Turn on and Eta Systematic

mH (GeV)	110	115	120	130
KA	33.0	34.8	43.0	64.7
KA New	33.7	33.7	43.3	61.6
KA Eta	33.6	33.3	42.8	61.4

Phex Observed Limits:

mH (GeV)	110	115	120	130
KA one tag	42.8	47.8	51.8	145.2
KA two tags	45.2	41.2	46.2	77.8
KA combined	27.8	27.2	28.2	74.2
STST	56.8	47.8	66.8	94.8
STJP	71.8	88.8	142.8	206.8
ST+NNbtag	41.2	57.8	77.2	190.8
combined	23.8	26.2	45.8	87.8

Combining WH Central and Phex:

mH (GeV)	110	115	120	130	140	150
Expected (mean)						
Central	7.1	8.2	9.7	14.2	25.7	64.6
Phex	34.7	38.8	46.7	71.9	138	246.7
Combined	6.8	7.9	9.4	13.7	24.8	61.9
Observed						
Central	7.8	9.2	9.8	15.8	29.2	78.8
Phex	23.8	26.2	45.8	87.8	260.8	285.2
Combined	6.8	8.2	9.8	16.2	38.8	86.2