

Weekly report

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01.16

Thoretical Uncertanty

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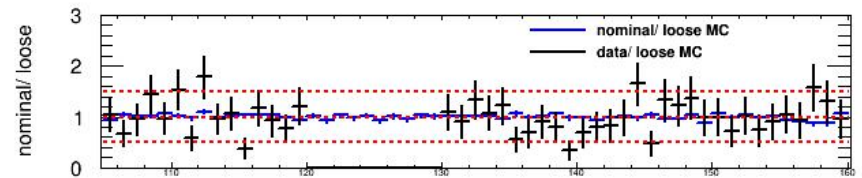
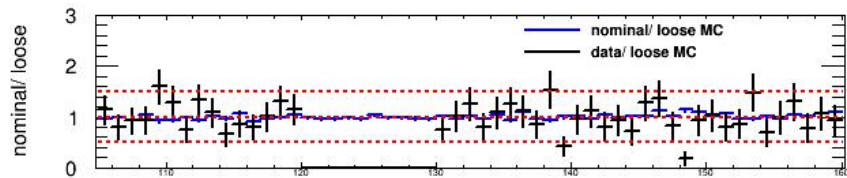
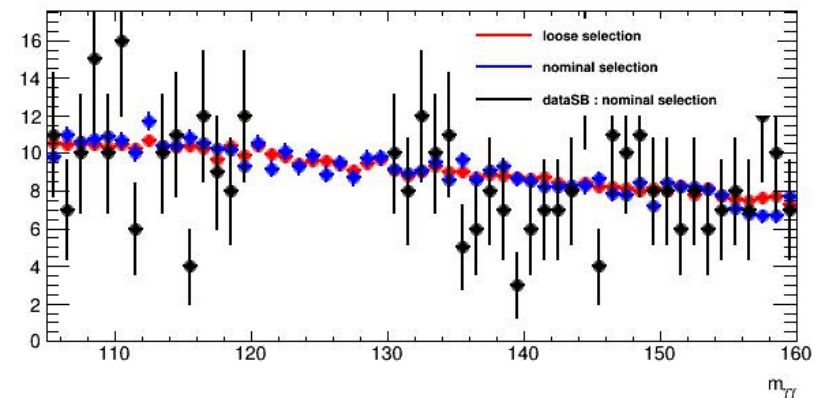
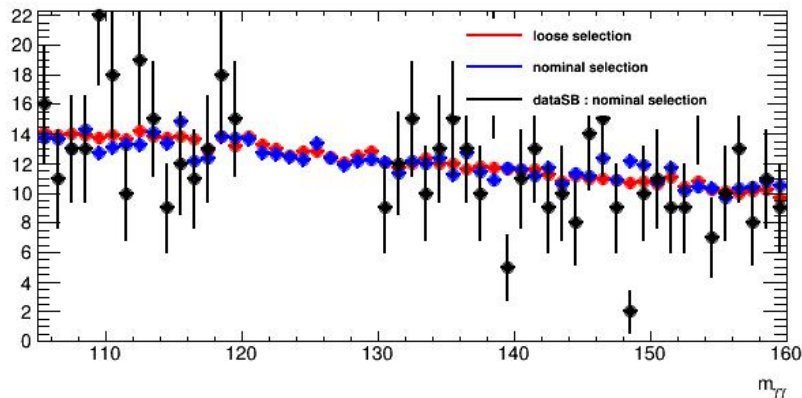
- Calculation from Maosen with MadGraph
 - NLO : inclusive $gg \rightarrow H + 0, 1, 2$ jets, exclusive 0jet, 1jet, 2jet
 - inclusive $WH + 0, 1, 2$ jets, exclusive 0jet, 1jet, 2jet
 - inclusive $ZH + 0, 1, 2$ jets, exclusive 0jet, 1jet, 2jet
- Suppose : $XS(3jet)/XS(4jet) = XS(2jet)/XS(3jet) = XS(1jet)/XS(2jet)$
- Fraction of events with different jet multiplicity is estimated in full sim sample after inclusive diphoton selection

sampleName	full simulation(3jet)	MadGraph(3jet)	relative	full simulation(4jet)	MadGraph(4jet)	relative
ggH	0.0643791	0.0181966	-0.717353	0.021731	0.00512241	-0.764281
WH	0.19021	0.223821	0.176703	0.0727109	0.0695991	-0.0427966
ZH	0.186998	0.141362	-0.244044	0.068927	0.0751649	0.0905005

Spurious Signal

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- Loose the selection : only apply inclusive diphoton + pT_{yy} cut
left : non-res 3jet
right : non-res 4jet



Spurious Signal result

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- non-res 3jet

– Function	Max(S)	Max(S/DeltaS)	Max(S/RefS)	Result
– Exponential	2.10339	3.55998	3.87124	fail
– ExpPoly2	1.99217	3.29932	3.66653	fail
– Dijet	2.45853	4.17772	4.52486	fail

- non-res 4jet

– Function	Max(S)	Max(S/DeltaS)	Max(S/RefS)	Result
– Exponential	1.51328	3.50086	2.11703	fail
– ExpPoly2	1.34851	3.05881	1.88651	fail
– Dijet	1.82914	4.24306	2.5589	fail

- Just find I read the DeltaS wrongly;

- `ws->var(obsName)->getError()`?