

weekly

Huijun

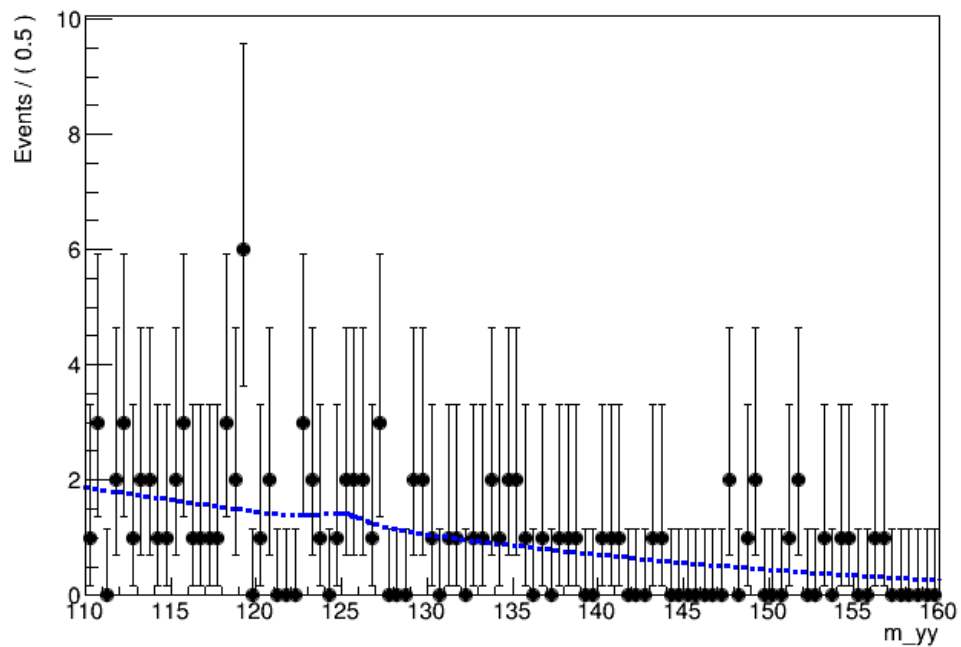
# The STAT challenge

- I just finished the stat challenge with H008
- The result is updated to the twiki page, which is comparable to Marc's

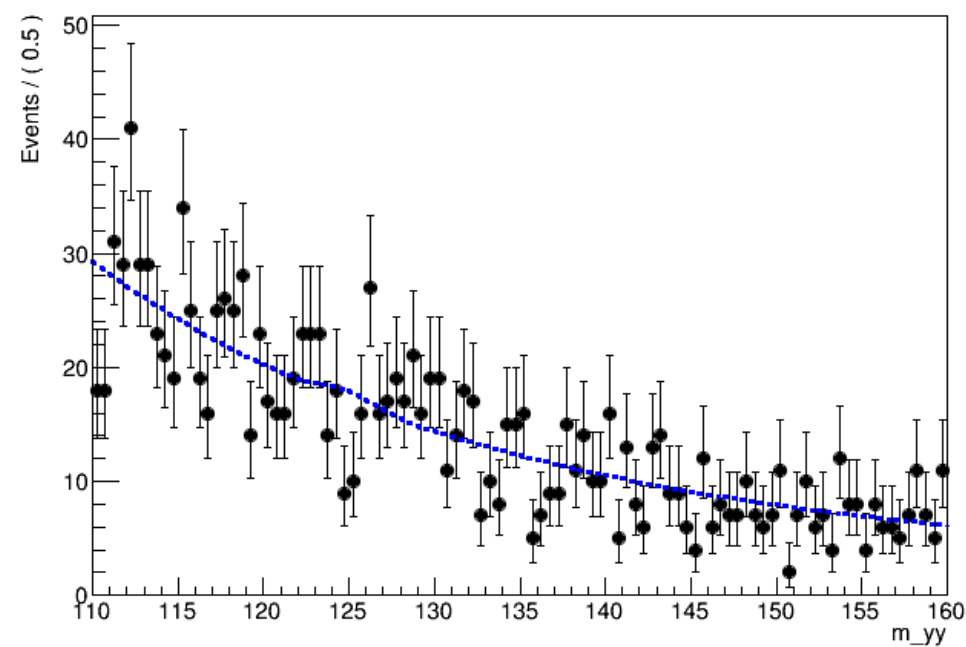
Analyzer or Lab	mu_ggH	mu_VBF	mu_WH	mu_ZH	mu_ttH	comments
Marc	1.24 +/- 0.27	-0.25 +/- 1.01	2.27 +/- 1.93	-4.86 +/- 7.97	2.18 +/- 1.45	Migrad+Hesse, strategy 1, option offset
Huijun	1.25 +/- 0.27	-0.24 +/- 1.00	2.26 +/- 1.91	-4.82 +/- 5.00	2.17 +/- 1.44	Migrad+Hesse, strategy 1, option offset

plots

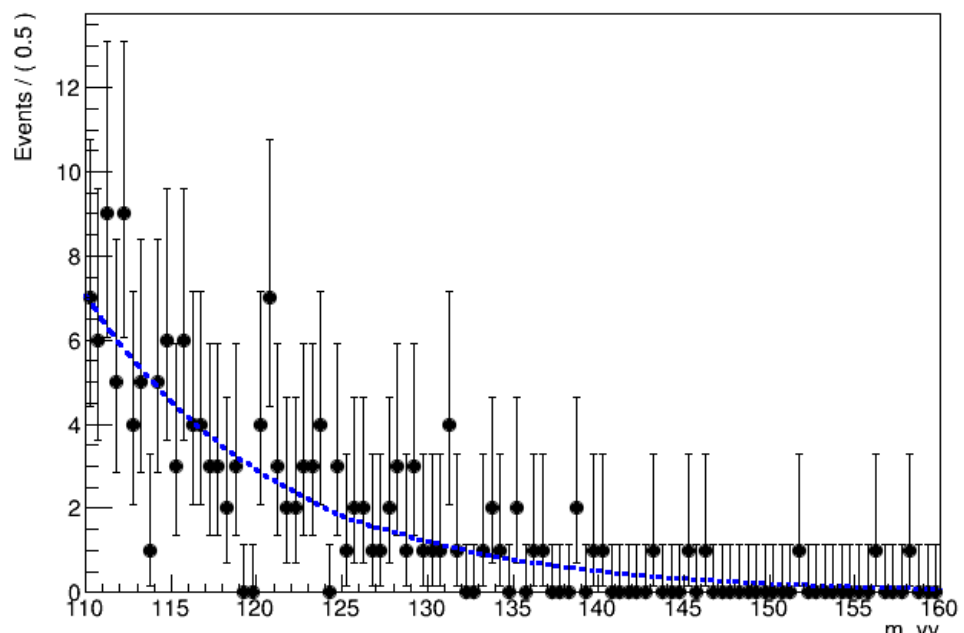
VBF



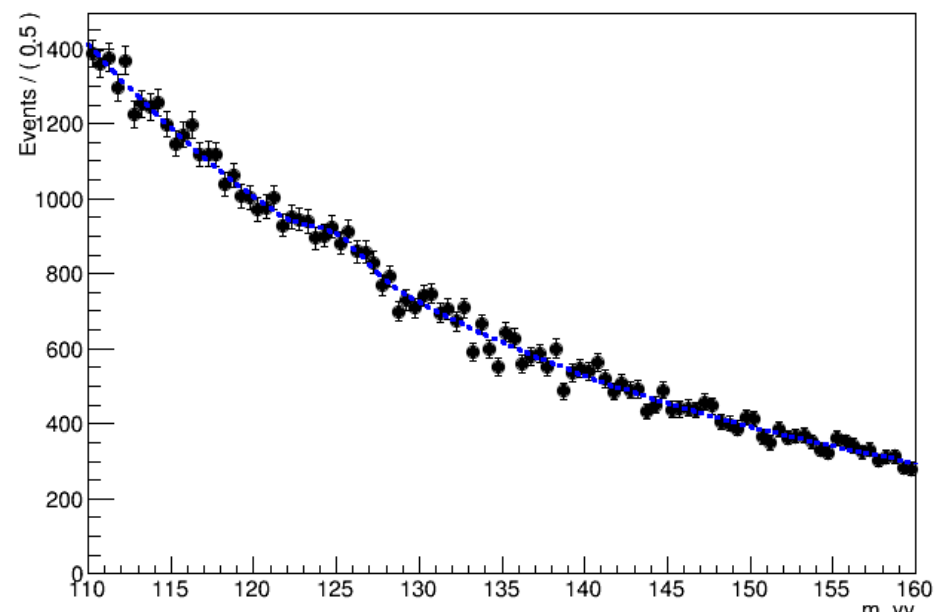
VH\_hadronic



VH\_leptonic



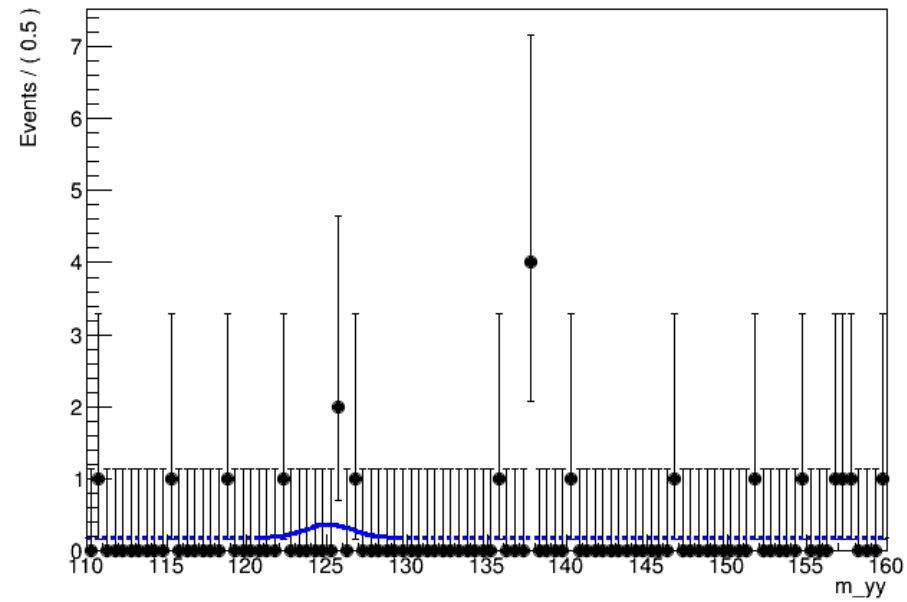
ggH



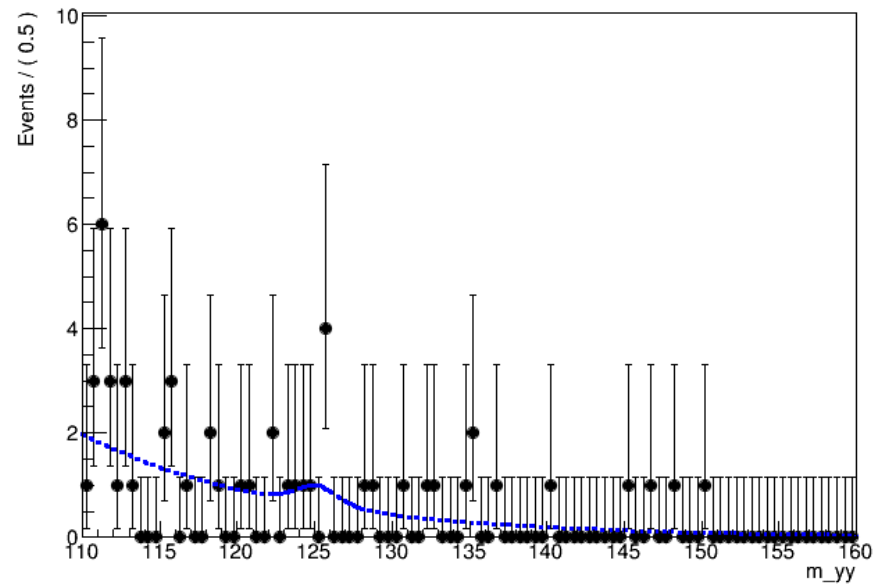
# plots

No plot for VH\_dileptons, since there is no event

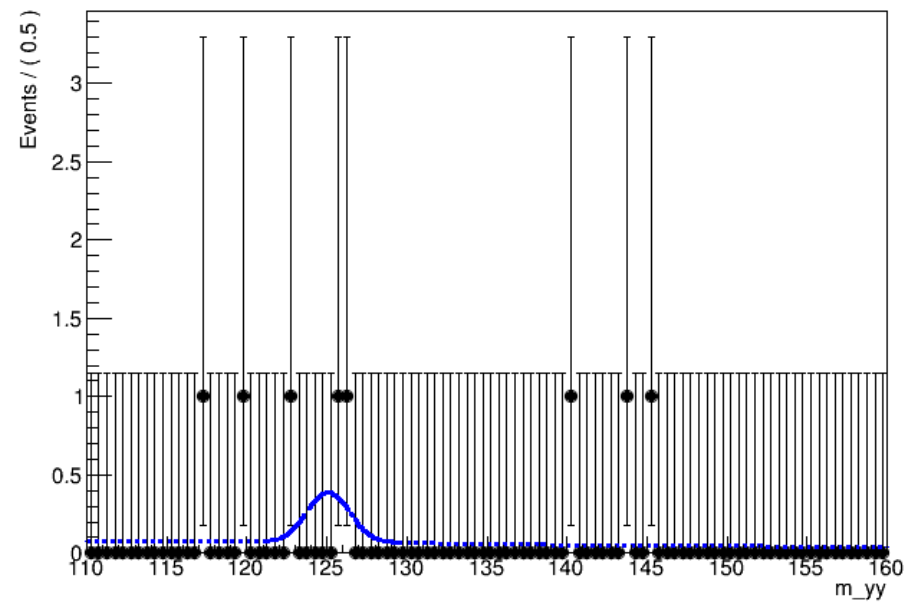
ttH\_hadronic



VH\_MET



ttH\_leptonic



# Systematic study for HGamCoupling

- Systematics on the ggH process is just finished
- Move to 19 NPs instead of the 4 NPs for jet systematics

Category	Nominal 4 $fb^{-1}$	Migrations	Relatively
TTH hadronic	0.04	0.00	0.00% $\pm$ 0.00%
TTH leptonic	0.00	0.00	- $\pm$ -
VH 2 leptons	0.00	0.00	- $\pm$ -
VH leptonic	0.00	0.00	- $\pm$ -
VH MET	0.00	0.00	- $\pm$ -
VH hadronic high	0.46	-0.00	-0.07% $\pm$ 0.01%
VH hadronic low	2.08	0.13	6.31% $\pm$ 0.41%
VBF high	0.98	-0.05	-5.15% $\pm$ 0.50%
VBF low	2.59	0.14	5.34% $\pm$ 0.31%
GGF	151.72	-0.22	-0.14% $\pm$ 0.00%

Table 21: "JET\_EffectiveNP\_1\_1up"

Category	Nominal 4 $fb^{-1}$	Migrations	Relatively
TTH hadronic	0.04	0.00	0.00% $\pm$ 0.00%
TTH leptonic	0.00	0.00	- $\pm$ -
VH 2 leptons	0.00	0.00	- $\pm$ -
VH leptonic	0.00	0.00	- $\pm$ -
VH MET	0.00	0.00	- $\pm$ -
VH hadronic high	0.46	0.04	7.77% $\pm$ 1.06%
VH hadronic low	2.08	-0.04	-1.73% $\pm$ 0.11%
VBF high	0.98	-0.00	-0.02% $\pm$ 0.00%
VBF low	2.59	0.04	1.49% $\pm$ 0.09%
GGF	151.72	-0.04	-0.03% $\pm$ 0.00%

Table 25: "JET\_EffectiveNP\_3\_1up"

Category	Nominal 4 $fb^{-1}$	Migrations	Relatively
TTH hadronic	0.04	0.00	0.00% $\pm$ 0.00%
TTH leptonic	0.00	0.00	- $\pm$ -
VH 2 leptons	0.00	0.00	- $\pm$ -
VH leptonic	0.00	0.00	- $\pm$ -
VH MET	0.00	0.00	- $\pm$ -
VH hadronic high	0.46	0.04	7.71% $\pm$ 1.05%
VH hadronic low	2.08	-0.04	-1.72% $\pm$ 0.11%
VBF high	0.98	-0.00	-0.02% $\pm$ 0.00%
VBF low	2.59	-0.03	-1.28% $\pm$ 0.08%
GGF	151.72	0.03	0.02% $\pm$ 0.00%

Table 49: "JET\_Pileup\_PtTerm\_1down"

Category	Nominal 4 $fb^{-1}$	Migrations	Relatively
TTH hadronic	0.04	0.00	0.00% $\pm$ 0.00%
TTH leptonic	0.00	0.00	- $\pm$ -
VH 2 leptons	0.00	0.00	- $\pm$ -
VH leptonic	0.00	0.00	- $\pm$ -
VH MET	0.00	0.00	- $\pm$ -
VH hadronic high	0.46	0.00	0.00% $\pm$ 0.00%
VH hadronic low	2.08	0.07	3.34% $\pm$ 0.22%
VBF high	0.98	0.02	2.33% $\pm$ 0.22%
VBF low	2.59	0.01	0.24% $\pm$ 0.01%
GGF	151.72	-0.10	-0.07% $\pm$ 0.00%

Table 33: "JET\_EtaIntercalibration\_Modelling\_1up"

Category	Nominal 4 $fb^{-1}$	Migrations	Relatively
TTH hadronic	0.04	0.00	0.00% $\pm$ 0.00%
TTH leptonic	0.00	0.00	- $\pm$ -
VH 2 leptons	0.00	0.00	- $\pm$ -
VH leptonic	0.00	0.00	- $\pm$ -
VH MET	0.00	0.00	- $\pm$ -
VH hadronic high	0.46	-0.00	-0.08% $\pm$ 0.01%
VH hadronic low	2.08	0.07	3.24% $\pm$ 0.21%
VBF high	0.98	0.02	2.32% $\pm$ 0.22%
VBF low	2.59	-0.01	-0.54% $\pm$ 0.03%
GGF	151.72	-0.08	-0.05% $\pm$ 0.00%

Table 37: "JET\_EtaIntercalibration\_TotalStat\_1up"

Category	Nominal 4 $fb^{-1}$	Migrations	Relatively
TTH hadronic	0.04	0.00	0.00% $\pm$ 0.00%
TTH leptonic	0.00	0.00	- $\pm$ -
VH 2 leptons	0.00	0.00	- $\pm$ -
VH leptonic	0.00	0.00	- $\pm$ -
VH MET	0.00	0.00	- $\pm$ -
VH hadronic high	0.46	0.04	7.80% $\pm$ 1.07%
VH hadronic low	2.08	0.06	2.98% $\pm$ 0.19%
VBF high	0.98	-0.00	-0.02% $\pm$ 0.00%
VBF low	2.59	-0.11	-4.14% $\pm$ 0.25%
GGF	151.72	0.01	0.01% $\pm$ 0.00%

Table 51: "JET\_Pileup\_RhoTopology\_1down"

Category	Nominal 4 $fb^{-1}$	Migrations	Relatively
TTH hadronic	0.04	0.00	0.00% $\pm$ 0.00%
TTH leptonic	0.00	0.00	- $\pm$ -
VH 2 leptons	0.00	0.00	- $\pm$ -
VH leptonic	0.00	0.00	- $\pm$ -
VH MET	0.00	0.00	- $\pm$ -
VH hadronic high	0.46	-0.12	-26.56% $\pm$ 4.02%
VH hadronic low	2.08	0.33	15.99% $\pm$ 1.01%
VBF high	0.98	-0.05	-5.09% $\pm$ 0.49%
VBF low	2.59	0.12	4.79% $\pm$ 0.28%
GGF	151.72	-0.28	-0.19% $\pm$ 0.00%

Table 39: "JET\_Flavor\_Composition\_1up"

Category	Nominal 4 $fb^{-1}$	Migrations	Relatively
TTH hadronic	0.04	0.00	0.00% $\pm$ 0.00%
TTH leptonic	0.00	0.00	- $\pm$ -
VH 2 leptons	0.00	0.00	- $\pm$ -
VH leptonic	0.00	0.00	- $\pm$ -
VH MET	0.00	0.00	- $\pm$ -
VH hadronic high	0.46	0.04	7.80% $\pm$ 1.07%
VH hadronic low	2.08	-0.03	-1.37% $\pm$ 0.09%
VBF high	0.98	-0.00	-0.02% $\pm$ 0.00%
VBF low	2.59	-0.11	-4.14% $\pm$ 0.25%
GGF	151.72	0.10	0.07% $\pm$ 0.00%

Table 41: "JET\_Flavor\_Response\_1up"