

# work status

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# Outline

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- ◉ WWyy status
- ◉ WWWW status
- ◉ Qualification&Shift

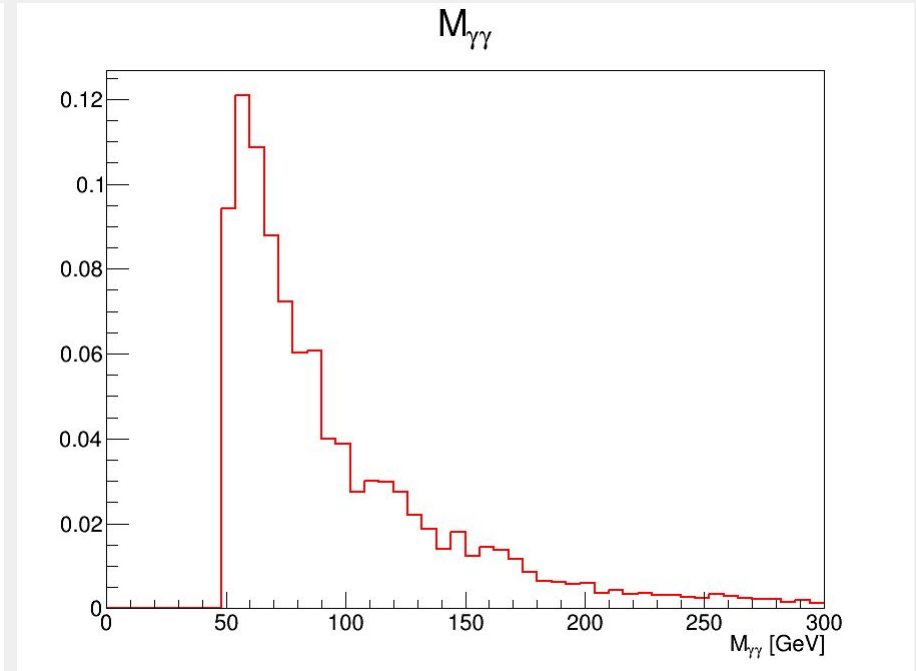
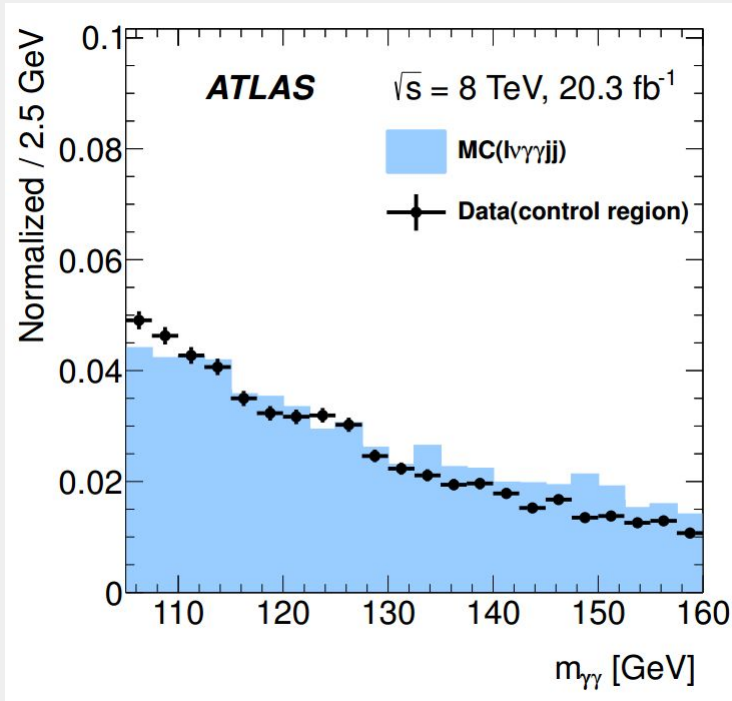
# WWyy bkg samples status

- Since jlvyy and jjjyy production will take a long time, prepare the files locally and pass them to official production
- For Alpgen2, set 5M to run -> 20k weighted events -> several~500 unweighted ones(very random).

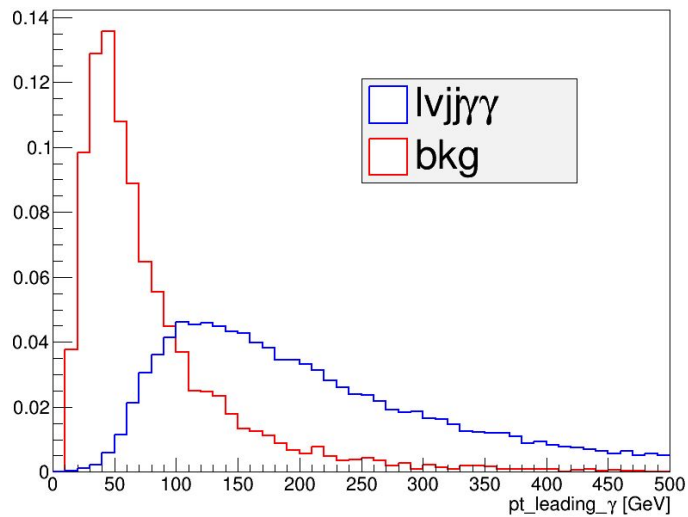
		Generators	Lumi(pb)*xsec(pb <sup>-1</sup> )	needed	currently produced	status
lvjyy	QCD=2	MadGraph5	20k*0.03=600	100k	100k	done
	QCD=0	MadGraph5	20k*0.001=20	5k?	1k	this week
jjjyy (light jets)		Alpgen2	20k*12=240k	500k	250k	this week
lvlvy		MadGraph5	20k*6e-5=1.2	5k?	20k	done

# bkg lvjjyy(QCD=2)

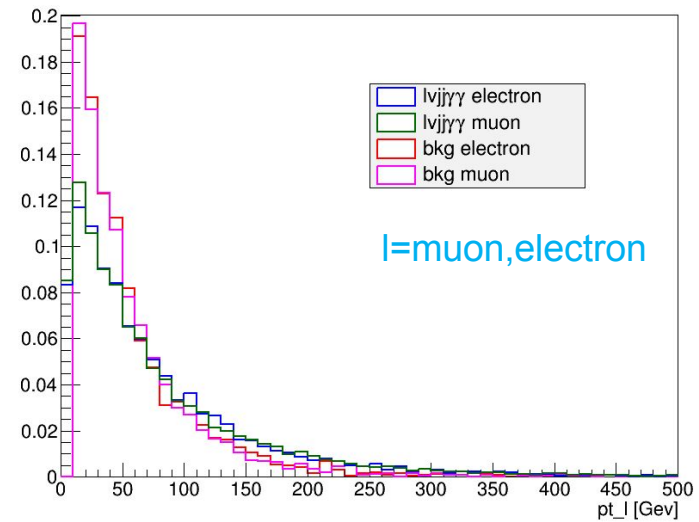
- change  $m_{\gamma\gamma}$  from 85 GeV to **50 GeV**, hope this will fix the disagreement between MC and data in RUN-I



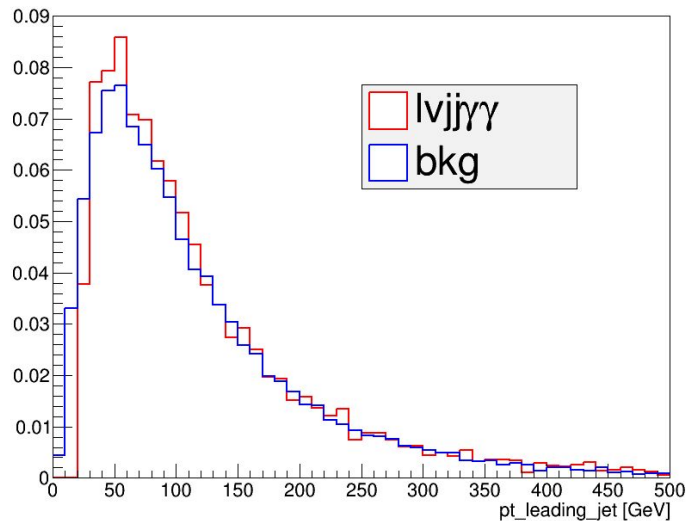
# bkg lvjj $\gamma\gamma$ (QCD=2) vs NLO nonresonant hh

pt\_leading\_ $\gamma$ 

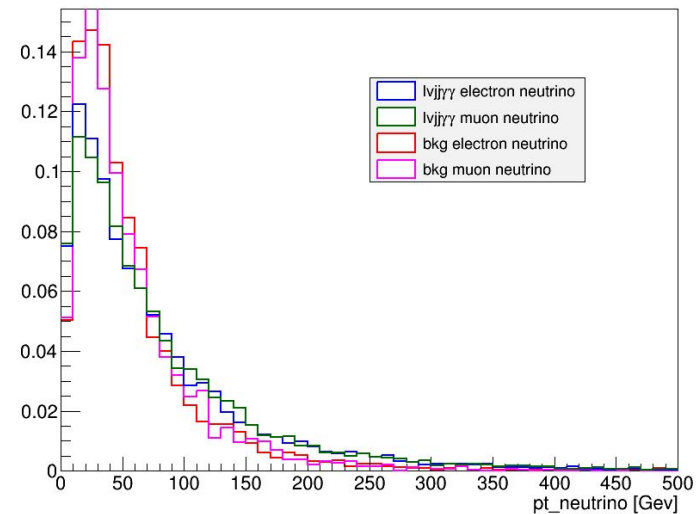
pt\_l



pt\_leading\_j

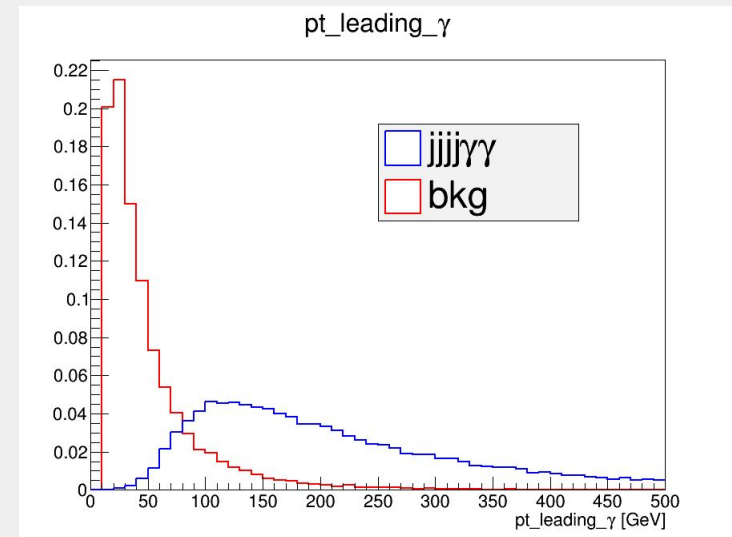
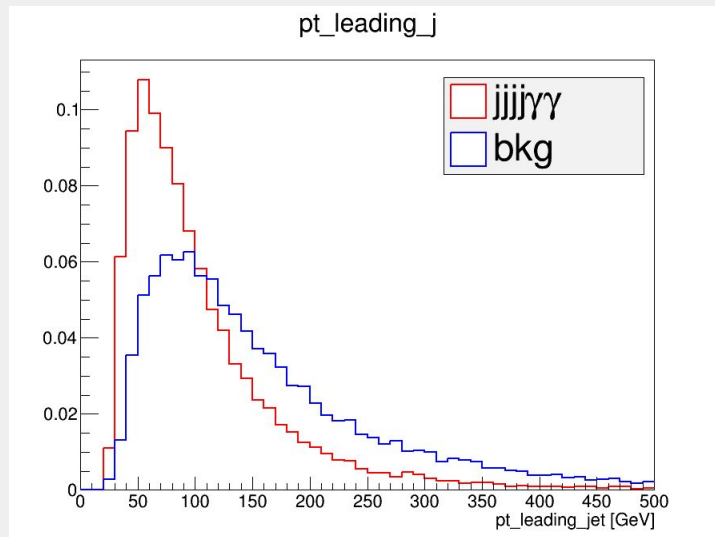
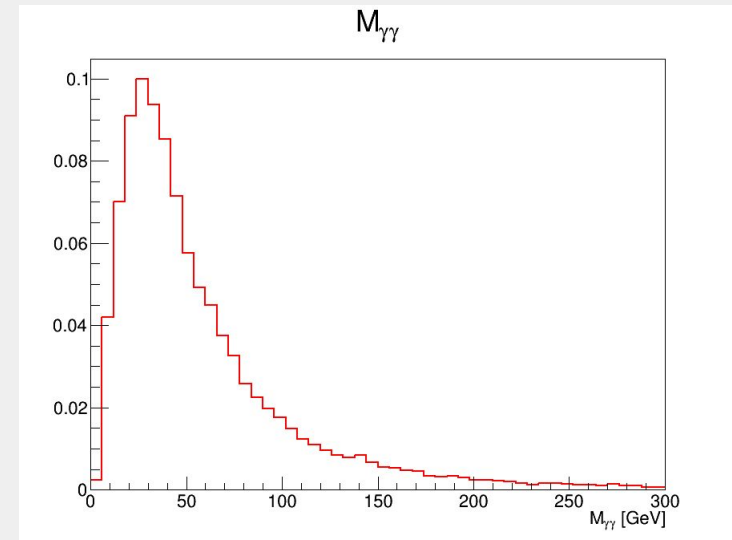


pt\_neutrino



# bkg jjjjyy(light jets) vs NLO nonresonant hh<sup>6</sup>

- use alpgen to produce bkg jjjjyy
- no  $m_{yy}$  cut,  $pt_y > 10\text{GeV}$



# Object definition

		previously	currently
electron	pT	10(GeV)	25(GeV)
	eta	$<2.47$	$1.52 \leq  \eta  \leq 2.47$ or $ \eta  \leq 1.37$
	ID	-	Tight/Medium/Loose
	isolation	-	Tight/Loose/Gradient
muon	pT	-	10.0(GeV)
	eta	-	$ \eta  \leq 2.5$
	ID	-	Medium
	isolation	-	Tight/Loose/Gradient
photon	pT	25(GeV)	25(GeV)
	eta	$ \eta  < 2.37$	$1.52 \leq  \eta  \leq 2.47$ or $ \eta  \leq 1.37$
	ID	-	Tight/Medium/Loose
	isolation		Cone20/Cone20Higgs/Cone40/Cone40CaloOnly
jet	pT	25(GeV)	25(GeV)
	eta	$ \eta  \leq 4.4$	$ \eta  < 4.4$

signal region definition	Njets	Nbjets	Nlepton	Nphoton
	$\geq 2$	$\leq 0$	$\geq 1$	$\geq 2$

# have a first look at data

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- ⦿ not filled yet

# WWW status

- sig:

>>Pythia8/MadGraph5 authors -> Delphes problem...

>>contact delphes author, not yet reply

- bkg:

>>produced  $pp \rightarrow hh \rightarrow w^+w^-w^+w^-$ ,  $w^+ \rightarrow l^+ \nu$ ,  $w^- \rightarrow x x$

>>plots not ready yet, a little problem about versions.

# others & summary

- Qualification task:
  - ›› trying to make xAOD produced from Weiming's codes work in tracking packages
- Shift, confirmed. will book one this week.