

# Weekly Report

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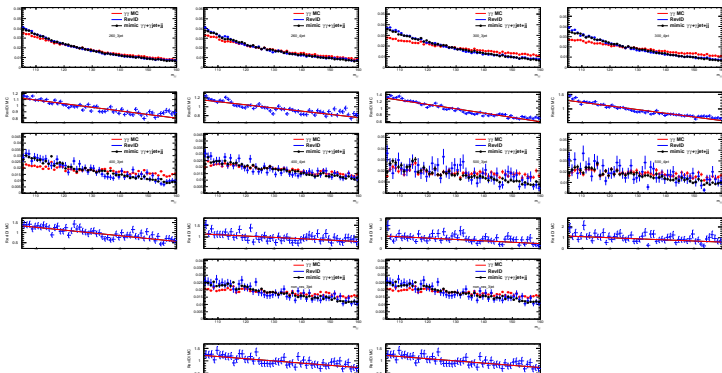
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# Outline

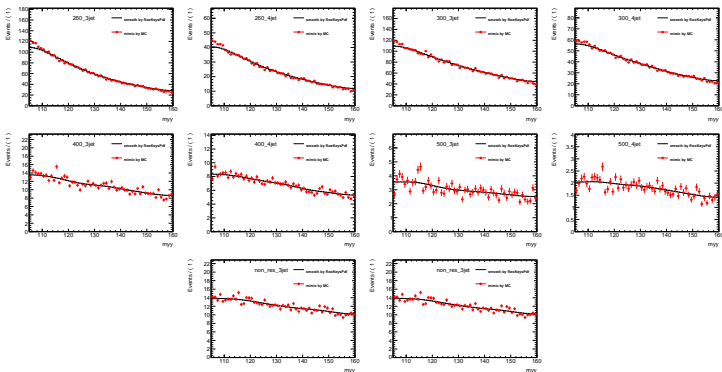
- merge  $\gamma\gamma$  and  $\gamma - jet$ , which is estimated by reverse ID and normalized by purity measurement
- smooth the shape with RooKeysPdf : `RooKeysPdf* keys=new RooKeysPdf("keys","keys",*x,*obsData,RooKeysPdf::MirrorBoth,1)`
- follow Nicolas' suggestion : use `SumW2Error(false)` to obtain  $\Delta S$

# mimic the background shape



- The shape of  $\gamma\gamma - jet$  and jet-jet is estimated by a linear fit to ratio of reducible bkg(RevID) to diphoton MC.
- The mimic background is obtained by purity measurement and shown in black point.

# smooth with RooKeysPdf



- use "MirrorBoth" from Xifeng's experience.
- the low edge is a little strange.

category	function	$N_{ss}$	$\max S/\Delta S$	$\max S/S_{ref}$	status
260 3jet	Exponential	-9.882	-0.10777	-19.6587	pass
260 4jet	Bern4	-3.11671	-0.162039	-10.8915	pass
300 3jet	ExpPoly2	-8.94413	0.15227	-15.6139	pass
300 4jet	Exponential	4.30749	0.243008	10.1666	fail
400 3jet	Exponential	-5.38873	-0.572439	-9.99638	fail
400 4jet	ExpPoly2	-1.46688	-0.182723	-2.70357	pass
500 3jet	Dijet	-1.02321	-0.198224	-1.78249	pass
500 4jet	Exponential	0.711771	0.180995	1.15847	pass
non-res 3jet	Exponential	3.34083	0.319444	6.14871	fail
non-res 4jet	Exponential	-1.46364	-0.177274	-2.04758	pass

No function passes the criteria in 3 categories.

category	function	$N_{ss}$	$\max S/\Delta S$	$\max S/S_{ref}$	status
260 3jet	Bern4	-7.28492	-0.120444	-14.4922	pass
260 4jet	Bern5	-9.99999	-0.184691	-34.9454	pass
300 3jet	Bern4	-6.21873	-0.138375	-10.8561	pass
300 4jet	Bern4	-3.06205	-0.14396	-7.22706	pass
400 3jet	Exponential	-1.17313	-0.119762	-2.17622	pass
400 4jet	Exponential	0.896654	0.122232	1.6526	pass
500 3jet	Exponential	-0.515783	-0.103527	-0.898521	pass
500 4jet	Exponential	0.468137	0.120229	0.761935	pass
non-res 3jet	Exponential	1.50419	0.144959	2.76841	pass
non-res 4jet	Exponential	0.662565	0.0803394	0.926902	pass

At least one function passes the criteria in each category.