

Weekly report

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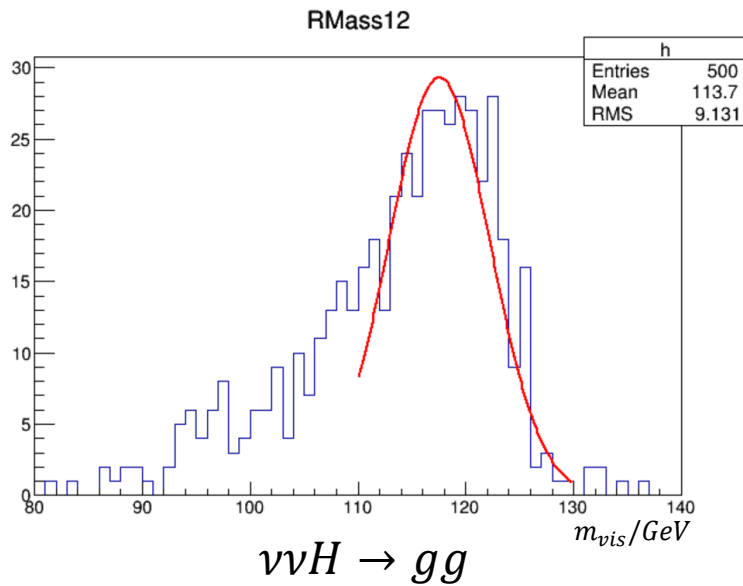


Pandora Calibration

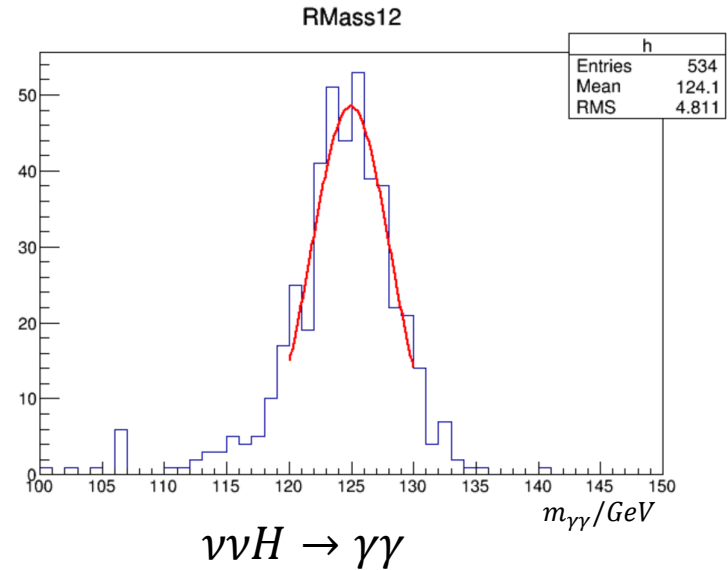
Fix the pars in MarlinPandora to 1, and calibrate pars in digitalization.

- Available sample:
 - 60GeV photon particle gun
 - 60GeV K_L particle gun
 - $\nu\nu H \rightarrow \gamma\gamma$
 - $\nu\nu H \rightarrow$ di-gluon
- Record DigiHit energy and MCParticle energy in each event (FSClasser::LGAbsCalibr).
- Minimize $\chi^2 = \sum (c_1 E_{Ecal1} + c_2 E_{Ecal2} + c_3 E_{Hcal} - E_{MC})^2$
- New calibration constant = old constant $\times c_i$ (i=1,2,3).
- Iterate until $c_i = 1$.

Pandora Calibration



EXT NO.	PARAMETER NAME	VALUE	ERROR
1	Constant	2.93192e+01	2.02412e+00
2	Mean	1.17538e+02	3.78453e-01
3	Sigma	4.68752e+00	2.74622e-01



EXT NO.	PARAMETER NAME	VALUE	ERROR
1	Constant	4.84936e+01	3.72890e+00
2	Mean	1.24940e+02	2.25871e-01
3	Sigma	3.19683e+00	3.00014e-01

Pandora Calibration

Calibration: $\nu\nu H \rightarrow gg$, 5k

EXT PARAMETER

NO.	NAME	VALUE	ERROR
1	cal0	1.30531e+00	6.13882e-04
2	cal1	1.98897e+00	1.86096e-03
3	cal2	2.88045e-01	8.96392e-04

Iteration: $\nu\nu H \rightarrow \gamma\gamma$, noISR.

initial	pars	Iteration×1	pars
42.65	$1.000 \pm 5 \times 10^{-4}$	42.65	$1.00 \pm 5 \times 10^{-4}$
84.86	$0.976 \pm 2.7 \times 10^{-3}$	82.82	$1.00 \pm 2.7 \times 10^{-3}$
0.1047	$1.73 \pm 6.34 \times 10^{-2}$	0.1811	$1.00 \pm 3.66 \times 10^{-2}$

Pandora Calibration

Particle Gun Sample:

- Class MCParticle:

int getPDG()

int getGeneratorStatus()

int getSimulatorStatus()

bool isCreatedInSimulation()

```
bool isStable = false;
if( _sType=="Generator" && imc-> getGeneratorStatus() == 1) isStable=true;
else if( _sType=="ParticleGun" && !imc->isCreatedInSimulation() ) isStable=true;

if( isStable ) { // stable particles only
```

Pandora Calibration

0	41	77	0	1.227	5.356	0.000	60.498
1	3	4	0	0.043	0.063	0.000	60.498
2	19	88	0	0.327	9.169	0.000	60.498
3	83	127	45	1.397	11.226	11.047	60.498
4	3	2	0	0.083	0.028	0.000	60.498
5	276	32	5	6.001	1.335	0.905	0.000
6	0	2	224	0.000	0.038	40.566	60.498
7	0	0	0	0.000	0.000	0.000	60.498
8	2	9	608	0.032	0.267	110.109	60.498
9	607	189	0	39.839	7.652	0.000	60.498
10	452	44	48	8.636	1.250	8.693	60.498
11	14	49	505	0.175	13.219	91.455	60.498
12	63	165	0	1.797	15.448	0.000	60.498
13	7	4	20	0.200	0.167	89.826	60.498
14	18	107	8	0.204	8.385	5.071	60.498
15	160	19	13	3.899	0.427	2.354	0.000
16	307	191	0	18.022	24.727	0.000	60.498
17	490	252	2	24.926	18.891	0.362	60.498
18	91	125	372	4.290	11.917	67.369	60.498
19	294	289	189	14.716	26.149	34.228	60.498
20	103	212	92	2.262	22.007	21.008	60.498
21	0	7	447	0.000	0.164	80.952	60.498
22	5	4	356	0.035	0.262	64.472	60.498

"abs_cali_KL.dat" 100L, 10800C