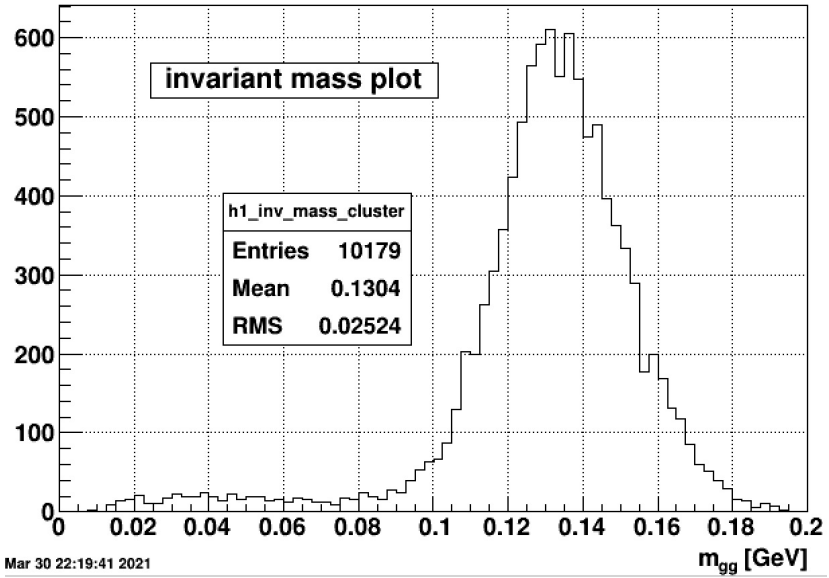
OO 200 GeV Plan

- Close FCS at beginning
- Take data with mid-rapidity trigger - 24h? Or 12h?
- Trigger on FCS (timing would be wrong – only FCS data) What trigger at what thresholds?
  - Trigger commissioning
  - pi0 and MIP from Ecal
  - MIP from Hcal
  - Ks, other hadrons? from Ecal+Hcal
- Open Ecal for pi0 @ Hcal for last 1day? 2day?
- Open both Ecal and Hcal after done?

```
FCS00-EHT
FCS01-HHT
FCS02-ETOT
FCS03-HTOT
FCS04-JP2
FCS05-EM2
FCS06-HAD2
FCS07-GAM2
FCS08-ELE2
FCS09-DiJP1
FCS10-DiEM1
FCS11-DiHAD1
FCS12-DiGAM1
FCS13-DiELE1
FCS14-PresOR
FCS15-Always1
```

Pi0 @ Hcal in single pi0 MC with Ercal off



Run22 Final Trigger Discussions

Stage 1 → Stage 2 34 DEP x 64Bit (8 x 8bit 2x2 sums) - Full bandwidth used
Stage 2 → Stage 3 2 DEP/IO x 19 bits - Much more bandwidth available
Stage 3 → TCU 16 bits - max

Final Trigger list for what purpose?
How many thresholds do we need for which trigger bits?
Do we need “geometrical” info for 4x4 or JP at Stage3?
Final 16 trigger bit list to TCU?

Akio

2021 April 26,27

Current Stage2 (North or South) to Stage3 Bit List

- EHT (1 threshold on 2x2 sum)
- HHT (1 threshold on 2x2 sum)
- POR (OR on any EPD hit)
- ETOT (1 threshold on total sum)
- HTOT (1 threshold on total sum)
- JP 1,2 (2 thresholds on JP)
- EM 1,2,3 (3 thresholds on 4x4 & E/(E+H)>Rthr)
- Had 1,2,3 (3 thresholds on 4x4 & E/(E+H)<Rthr)
- Gam 1,2,3 (EM1,2,3 with EPD veto)
- Ele 1,2,3 (EM1,2,3 with EPD coincidence)

Thr	[GeV/c]	Trigger driving Thr
EMThr3	~1.5?	Trigger5 ? Trigger 9/10?
EMThr2	1.0	Trigger0 (Main DY)
EMThr1	0.7	Trigger1
HadThr3	?	???
HadThr2	?	Trigger9 (High-z Hadron)
HadThr1	?	Trigger10
JPThr2	?	Trigger11(Single Jet)
JPThr1	?	Trigger13 (DiJet)

- 19 bits / 128 bits available
- No “geometrical” info (other than trivial north/south)
- Do we have enough thresholds for each type of trigger?

Run22 Final Trigger

#100s	Logic	Threshold	PS	Purpose
0	ELE2-N & ELE2-S	EMThr2 ~ 1	1	Main DY/JPSI
1	ELE1-N & ELE1-S	EMThr1 ~ 0.7	Yes	DY/JPSI monitor (low threshold)
2	EM2-N & EM2-S	EMThr2 ~ 1	YEs	DY/JPSI monitor (no EPD)
3	EM3-N & EM3-S	EMThr3	1	DY/JPSI monitor (no EPD, high thr, no PS)
4	Had1-N & Had1-S	HadThr1	Yes	DY/JPSI monitor (Had condition)
5	ELE1-N & ELE2-S OR ELE2-N & ELE1-S	EMThr1 & 2	Yes	DY/JPSI monitor (asymmetric thresholds)
6	EM2-N | EM2-S	EMThr2	Yes	DY/Jpsi monitor (single arm, no EPD)
7	ELE3-N | ELE3-S	Need EM4?	?	Single Electron
8	GAM3-N | GAM3-S	Need EM4? 5?	?	Single Pi0
9	Had2-N | Had2-S	HadThr2	1	Main high-z Hadron
10	Had1-N	HadThr1	Yes	Monitor high-z hadron
11	JP2-N | JP2-S	JP2	1	Single Jet
12	JP1-N | JP1-S	JP1	Yes	Jet monitor
13	JP1-N & JP1-S	JP1	1	Dijet
14	ETot-N | ETot-S | HTot-N | HTot-S	?	-	Cosmic
15	EHT-N | EHT-S | HHT-N | HHT-S	?	-	Test, Debug, Cosmic