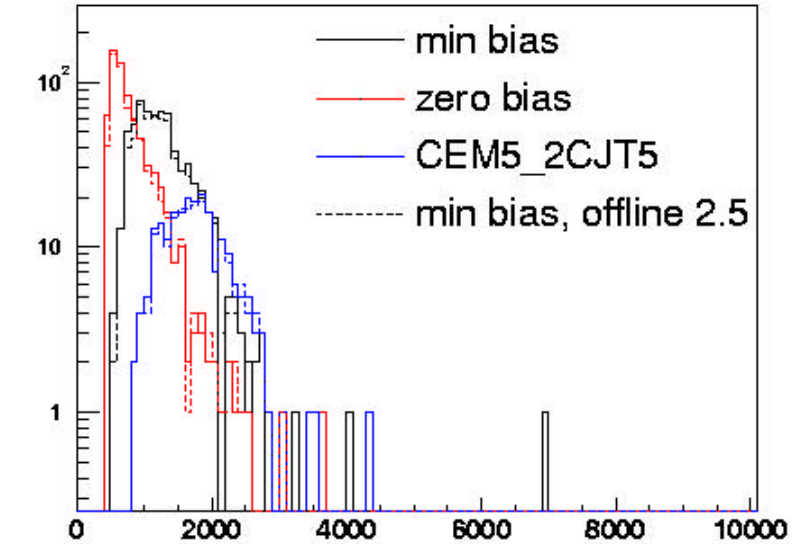
Offline zero suppression bug

- In p11.11.xx
- calunpdata/src/CalUnpToMCReco.cpp
  - `bool suppressChannel = (abs(counts) < zlim);`
- Should be <=
- i.e. limit of 3 should suppress –3,-2,-1,0,1,2,3
- Calculate **zlim** by
  - `int zlim = (int) (zsupth*sigma + 0.5);`
- Example at 2.5 threshold:

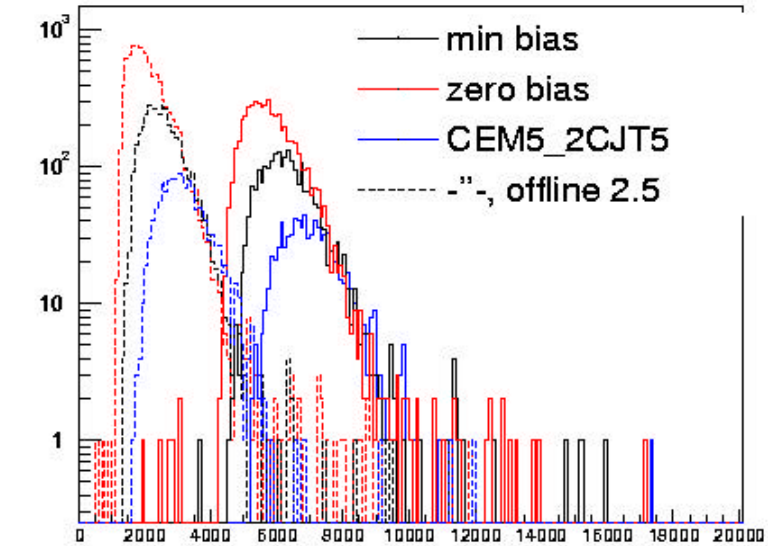
RMS	Expected limit	Effective limit	Expected occupancy	Actual occupancy	Fractional increase
2	5	4	1.24%	4.6%	3.7
5	13	12	0.94%	1.64%	1.74
8	20	19	1.24%	1.75%	1.41

- There are 47,400 physical channels

threshold	occupancy(%)	number channels
1.5	13.4	6405
2.0	4.6	2199
2.5	1.24	593



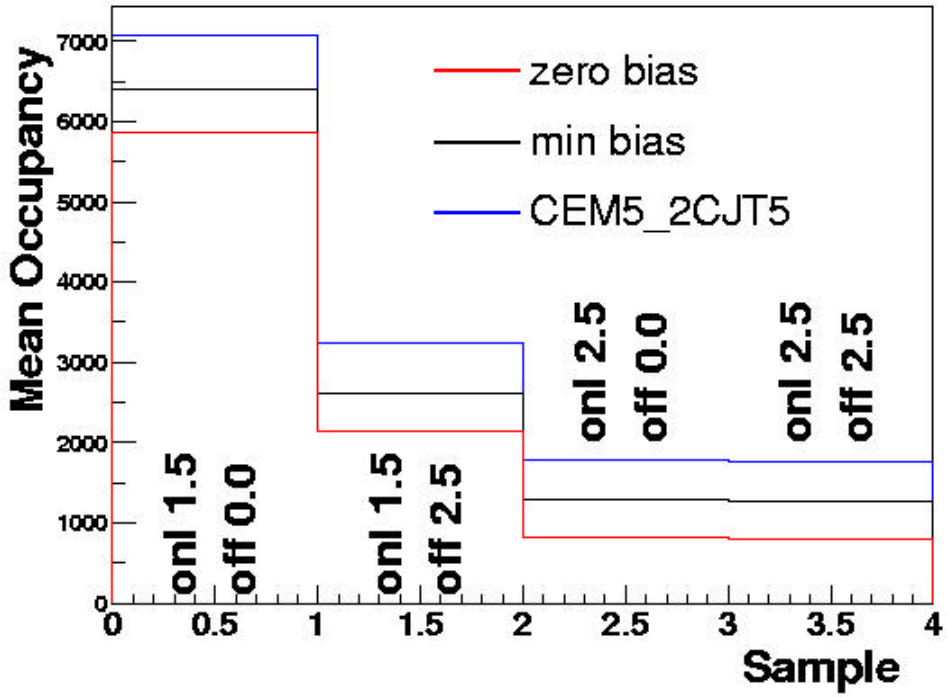
Occupancy, Run 163992 (online 2.5)



Occupancy, Run 162594 (online 1.5)

Occupancies

- Rough guess: 7 in EM, 4-5 in HAD
- i.e. ~7/11 at 2.0 and 4/11 at 2.4 ✍ 2.1 ave
  - 1.5 online/0.0 offline 5800
  - 1.5 online/"2.5" offline 2100
  - 2.5 online 750



Energy contribution

- What an ADC count contributes to the energy
- ADC to GeV factor
  - 0.3086 MeV/ADC
  - For ICD 0.0936 MeV/ADC
- Cal_weight applied per layer
- This is before NLC which is a factor 1.5-1.7 at low energy

	CC	EC	<noise>
EM1	9.6	10.2	30
EM2	2.9	5.3	9/17
EM3	7.9	10.2	17/22
EM4	8.7	12.2	24/33
FH1	7.7	-	45
FH2	7.2	-	43
FH3	8.6	-	51
CH	29.5	-	156
IH	-	8.2	49
MH	-	7.5-9.2	48
OH	-	32.0-36.0	200
MG	12.1-14.1	22.5-40.1	36/120
ICD	~6.5		7