

Post-shutdown diEM data



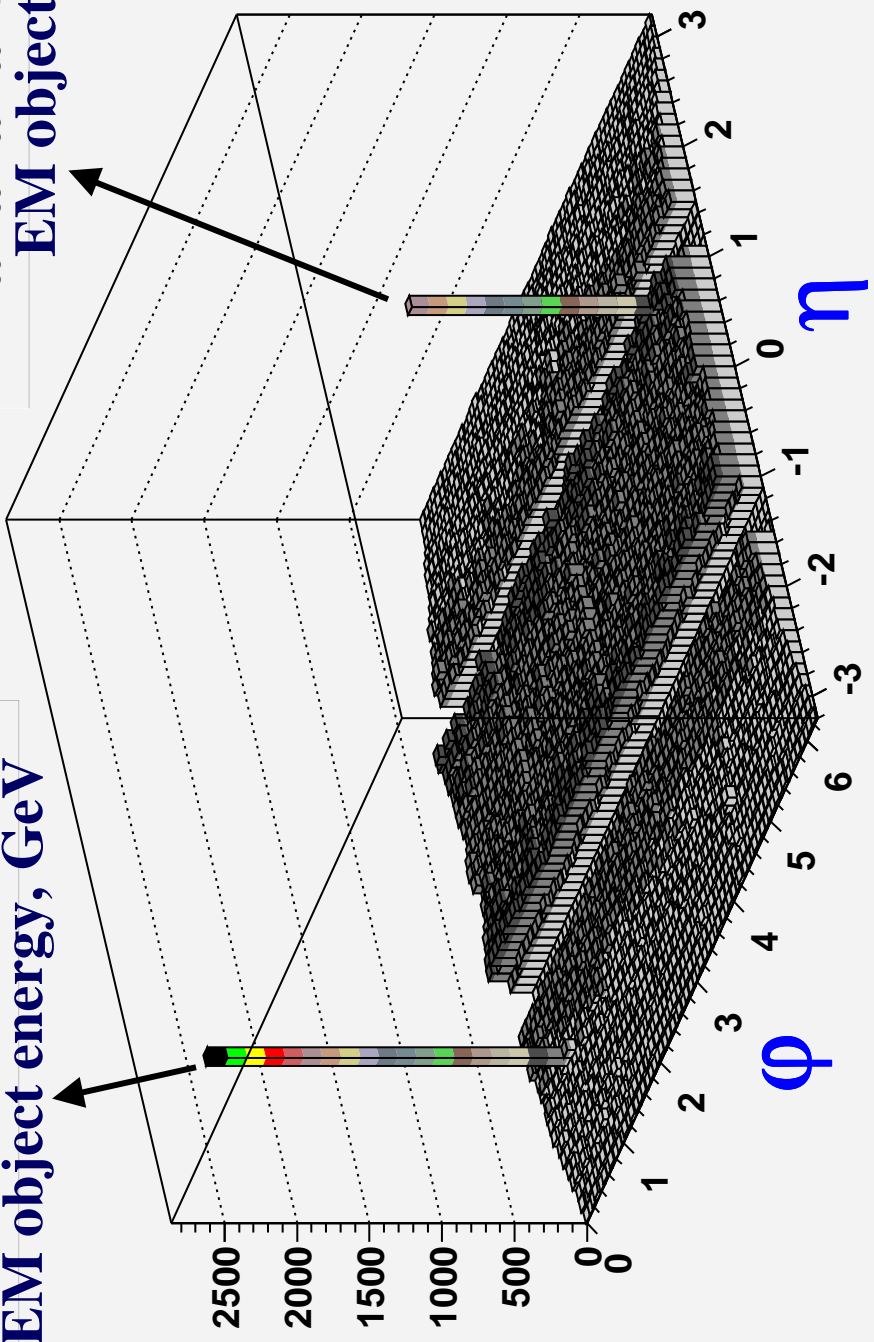
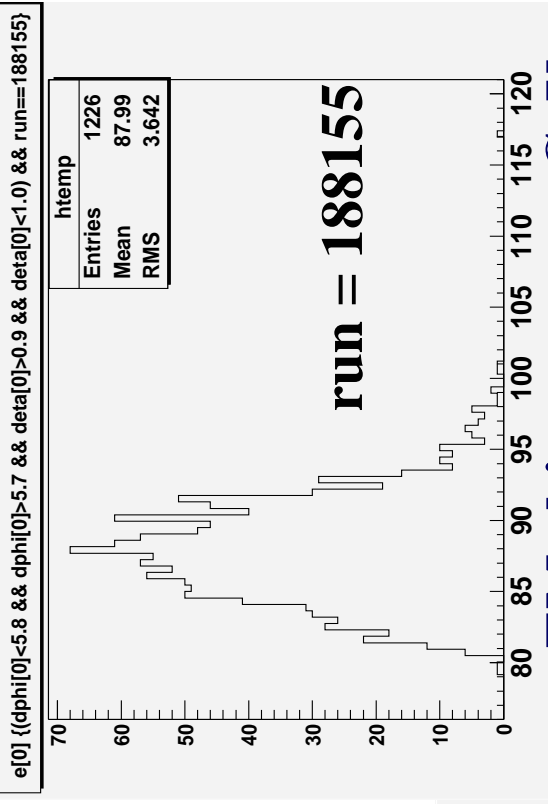
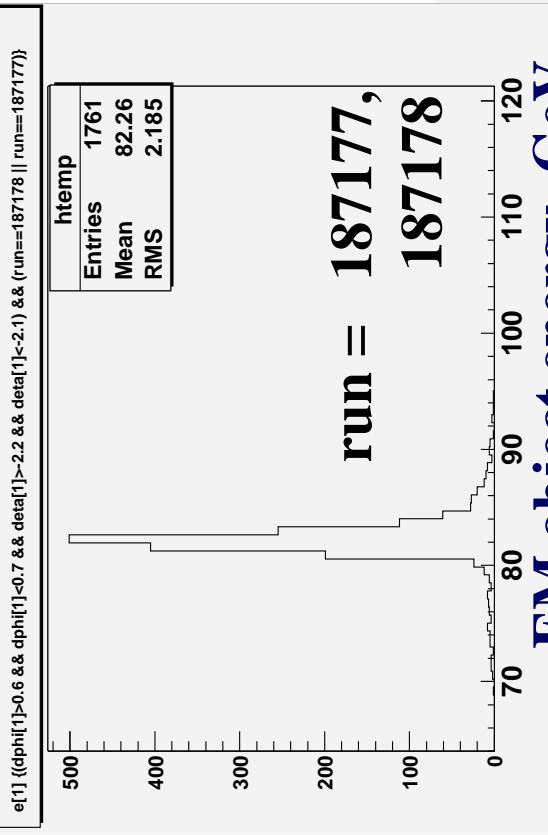
Alex Melnitchouk
Brown University

03/05/2004 ADM

Samples

- CS 2EMhighpt skim
 - **CSskim-2EMhighpt-p14.06.00-postNov2003**
 - **id=10,-11,11; PT>15**
 - **~300k events as of 03/01**
- **TMBS:**
 - /rooms/salon/projects/alex/
tmp_CSskim-2EMhighpt_TMBFILES_POST_MORIOND/
CSskim-2EMhighpt*.raw_p14.06.00
- **TMB_TREES:**
 - /rooms/salon/projects/alex/d0correct_v00-00-06_with_TMBAnalyze/
d0correct_with_TMBAnalyze/TMBAnalyze_x-p14.06.00-maxopt-Linux-
POSTMORIOND_CSskim-2EMhighpt*/tmb_tree.root
- **d0correct v00-00-06/tmb_analyzed: look at tmb_trees**

η - ϕ

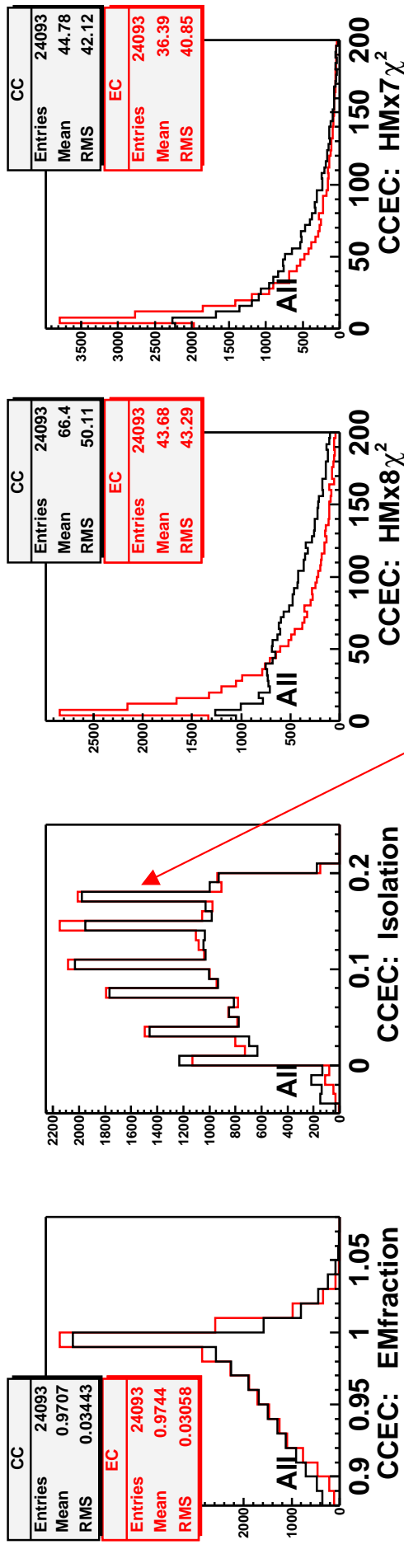
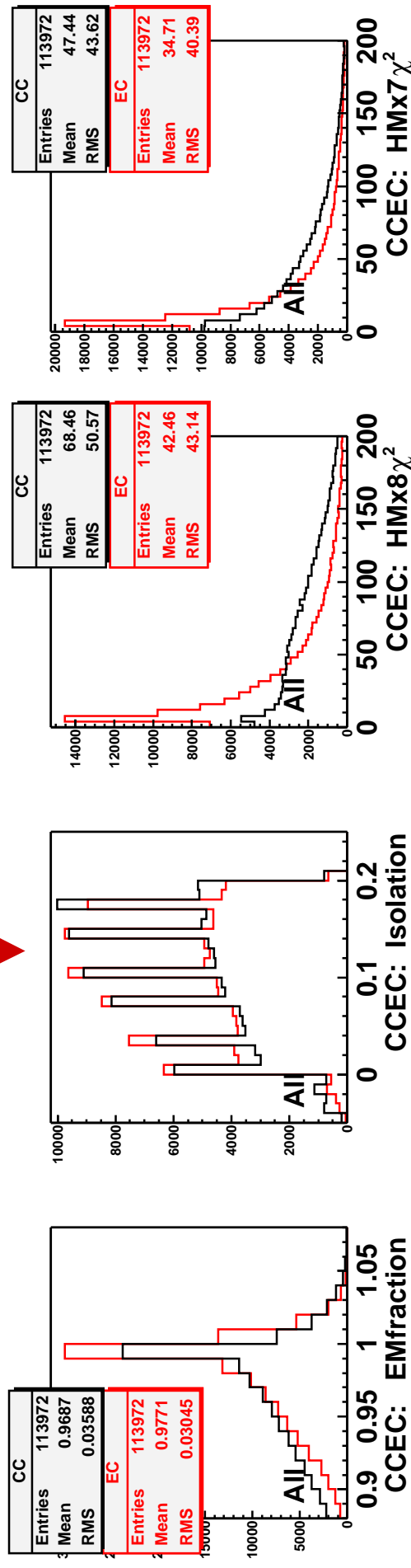


Outline

- **Remove 3 runs with hot cells**
- **Select events with PT_0 , $PT_1 > 25$ GeV**
- **Look at**
 - **EMfrac, Iso, HMX8, HMX7**
 - **PT, eta, phi**
 - **EMID Efficiency**
 - **Tracking Efficiency**
 - **Jet Multiplicity**
 - **Missing ET**
- **Compare with Moriond sample**
 - note i) $|\eta| < 2.4$ (Moriond) vs. $|\eta| < 3.2$ (Post-shutdown), fraction of $2.4 < |\eta| < 3.2$ objects is small though
 - ii) for Missing ET and Jet Multiplicity – only a piece of the Moriond sample (p14.05.02) was used for comparison

Moriond

CCEC: EMfrac, iso, HMX8, HMX7

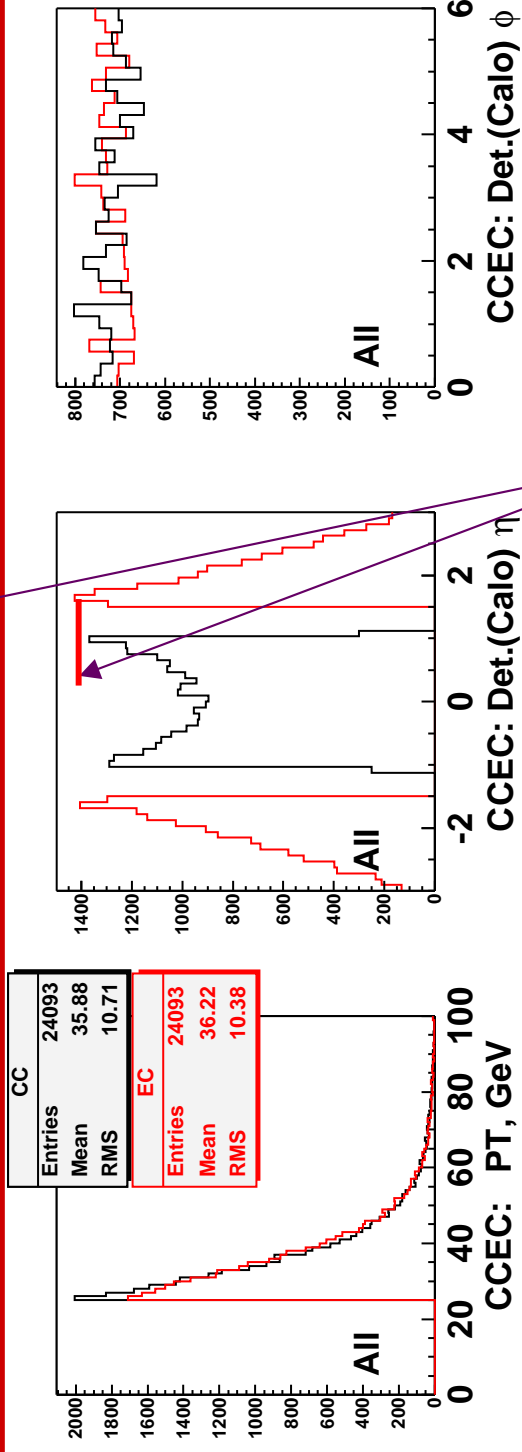
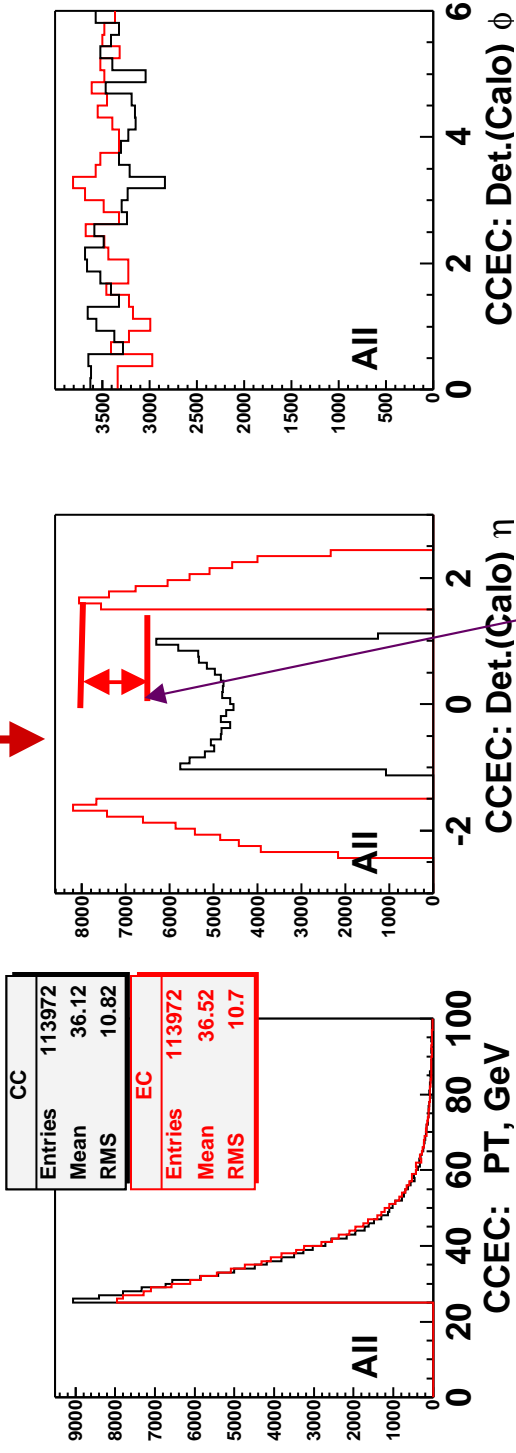


8 bits are used to store iso (vs 16)

Post-shutdown

Moriond

CCEC: PT, eta, phi

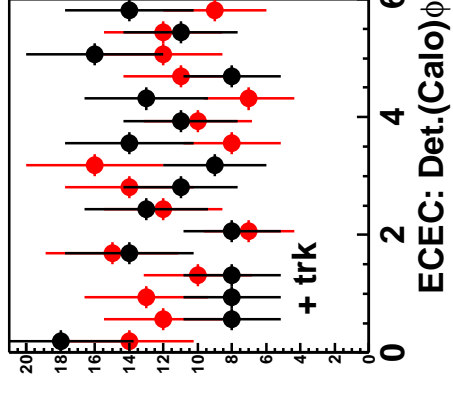
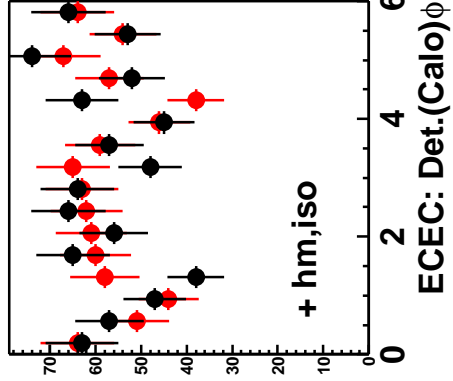
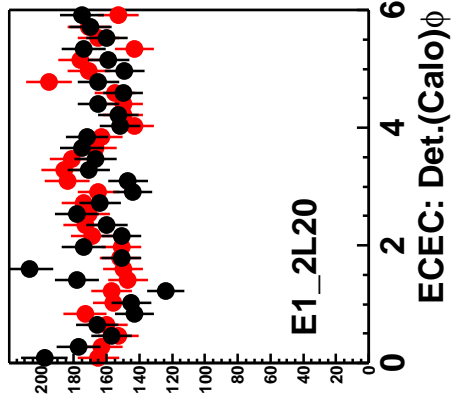
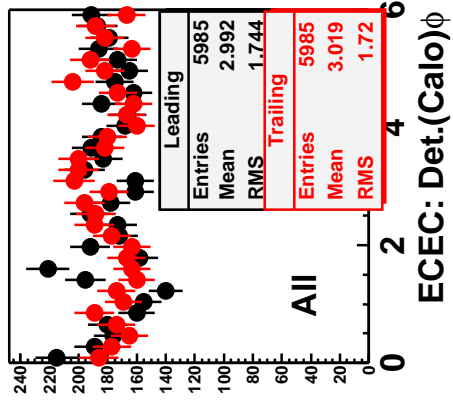
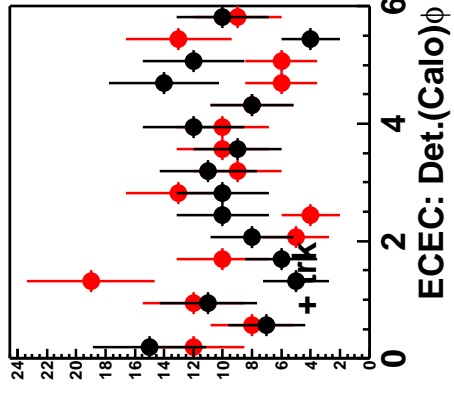
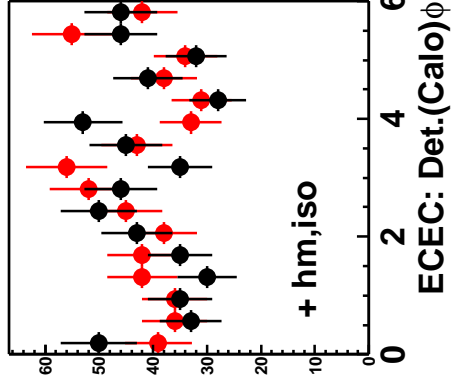
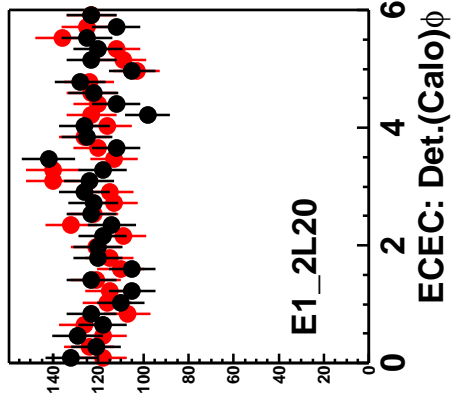
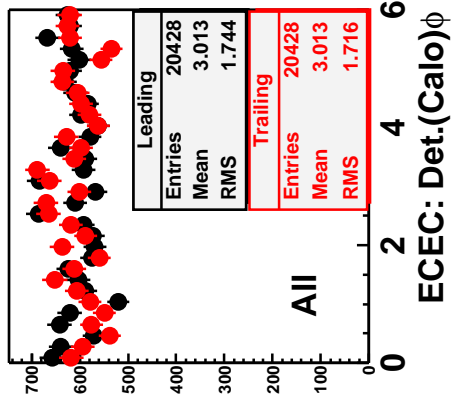


due to $|\eta| < 2.4$ vs. $|\eta| < 3.2$

Post-shutdown

Moriond

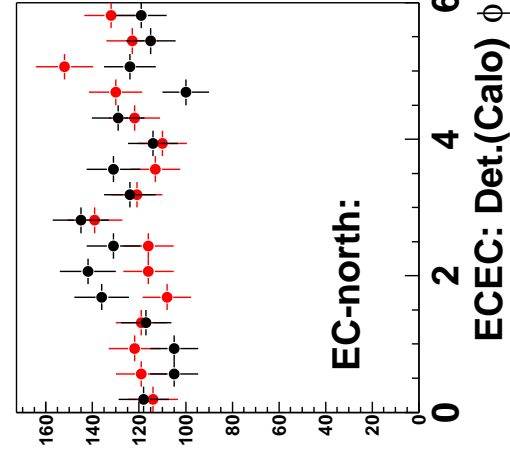
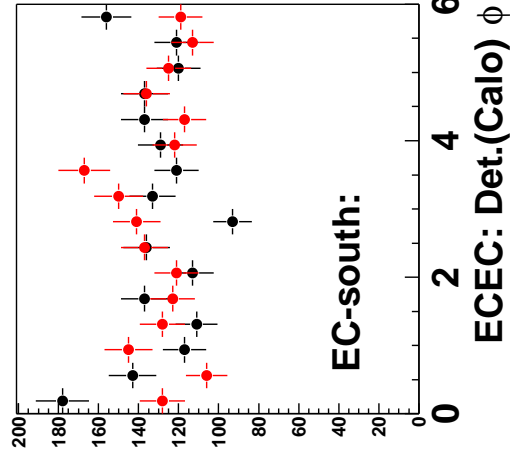
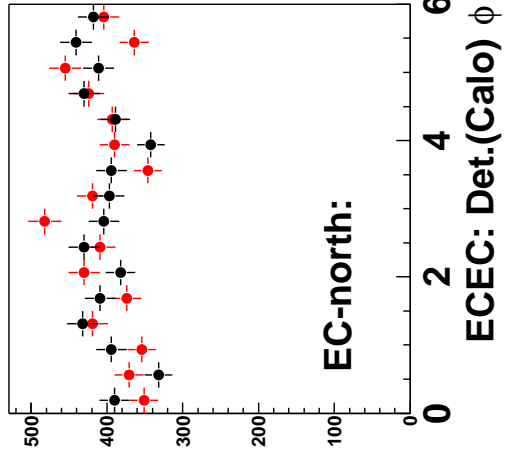
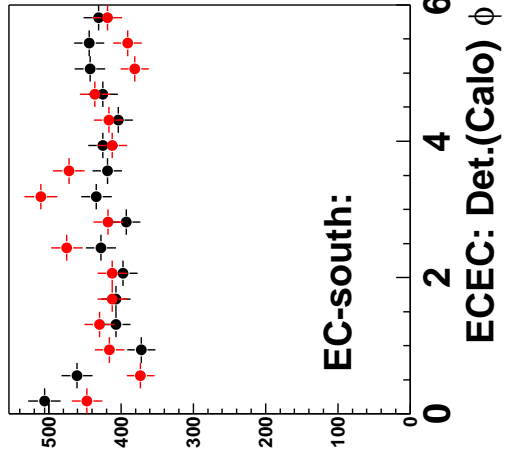
ECEC: DetectorPhi



Post-shutdown

Moriond

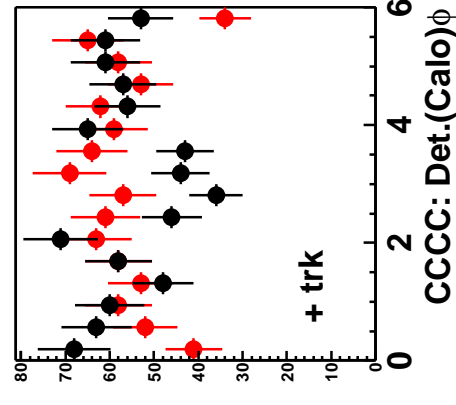
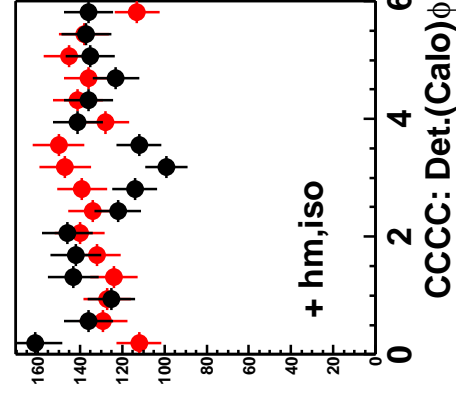
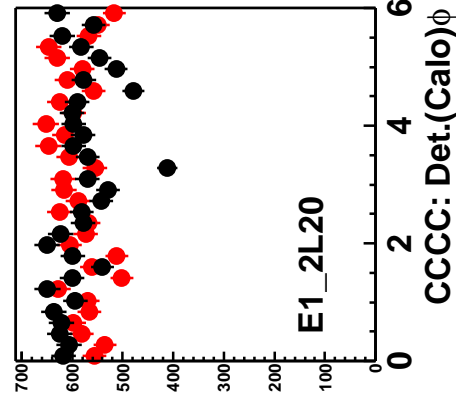
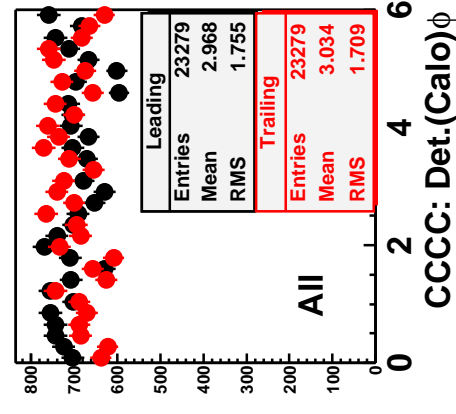
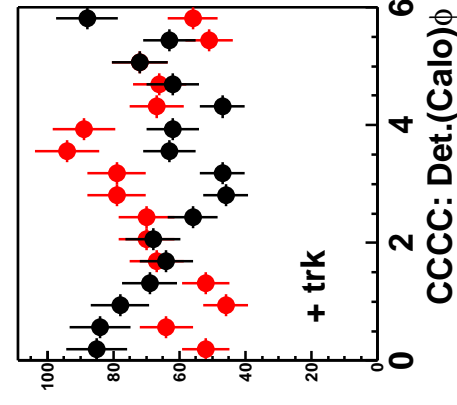
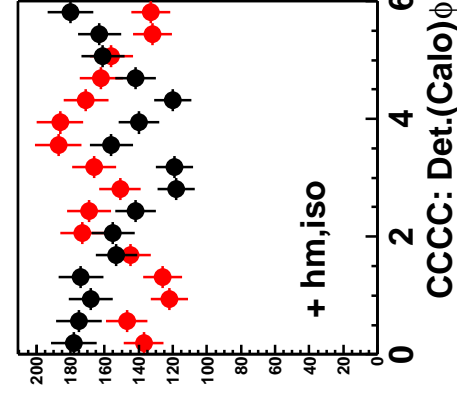
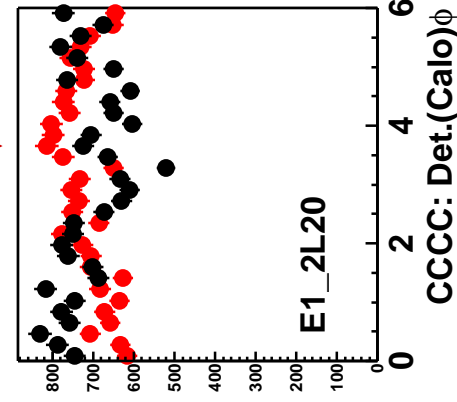
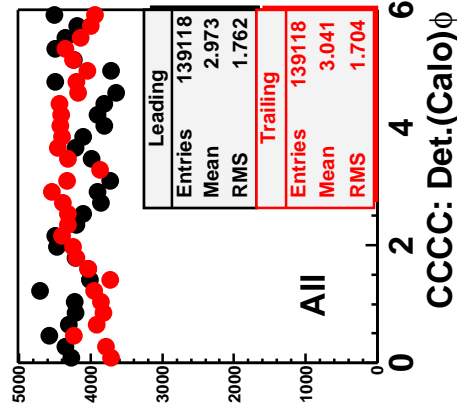
EC-south / EC-north: DetectorPhi



Post-shutdown

Moriond

CCCC: DetectorPhi



Post-shutdown

EMID Efficiency

HMx8<15 EC

Post-shutdown: 89.0 +- 1.4 % (stat)

Moriond: 89.4 +- 0.6 % (stat) %

CC HMx7<10

Post-shutdown: 87.9 +- 1.1 (stat)%

Moriond: 90.1 +- 0.4(stat) +- 3.5(syst) %

For PT>25 GeV , wrt (denominator requirement) iso<0.15

Tracking (reco+matching) Efficiency

CC:

Post-shutdown: 80.1 +- 1.3 % (stat)

Moriond: 81.6 +- 0.6 (stat) +- 4.4 (syst) %

EC:

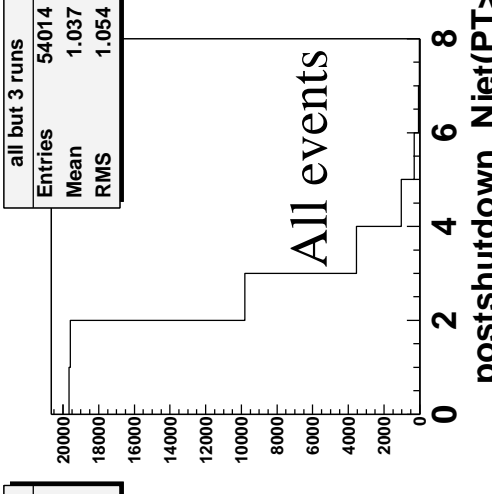
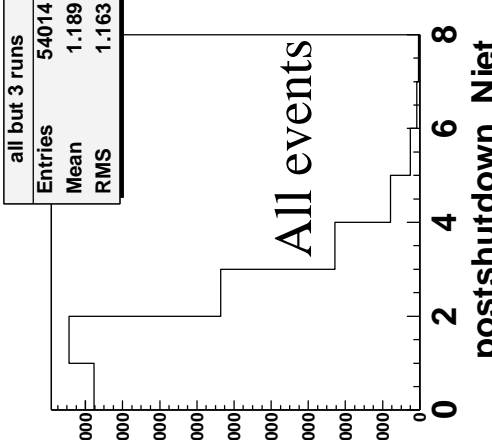
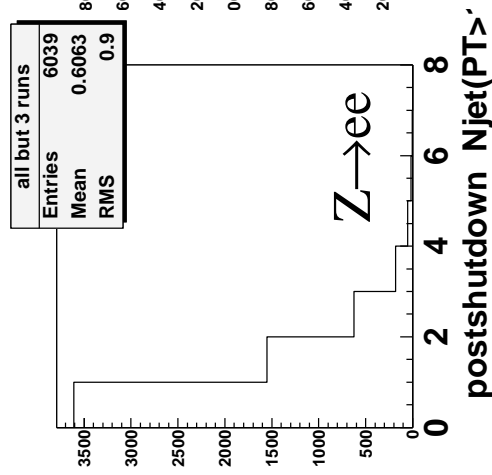
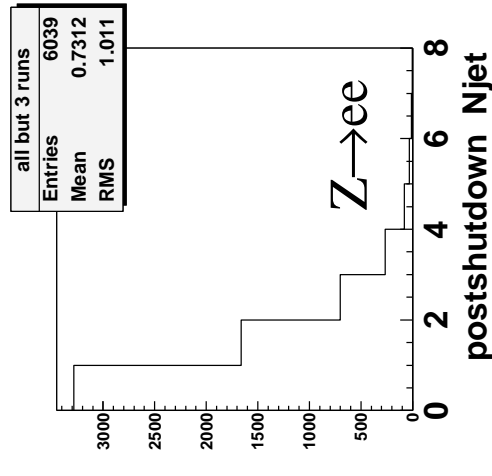
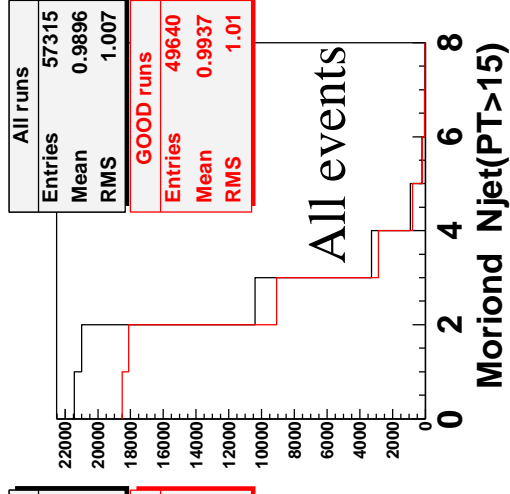
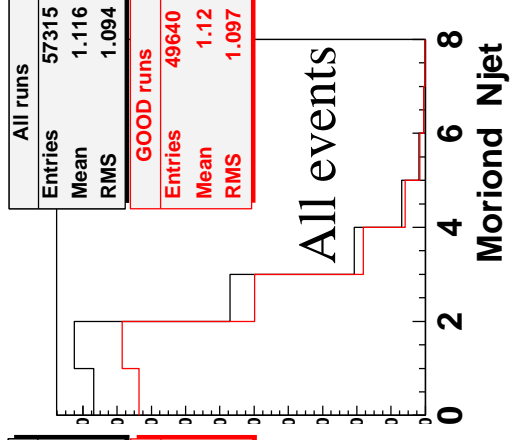
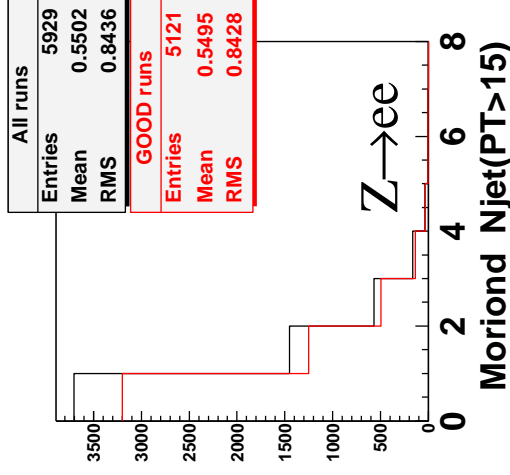
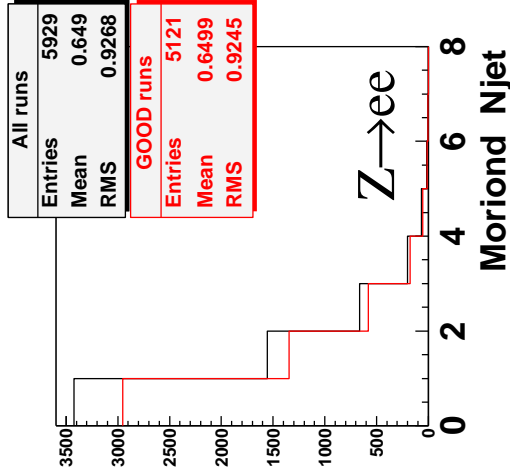
Post-shutdown: 64.2 +- 2.1 (stat)%

Moriond: 69.2 +- 1.0 (stat) +- 5.0 (syst) %

Matching criterion: $P(\chi^2 : \text{eta}, \text{phi}, E/p) > 0.01$

Moriond ↓

Jet Multiplicity

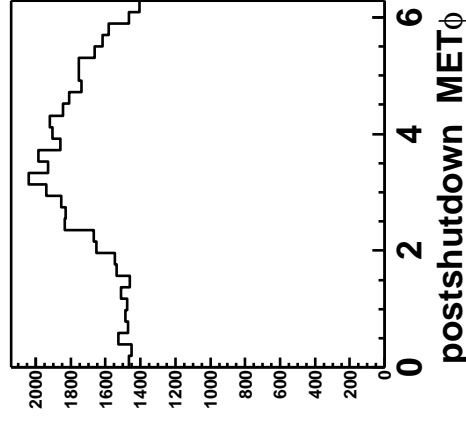
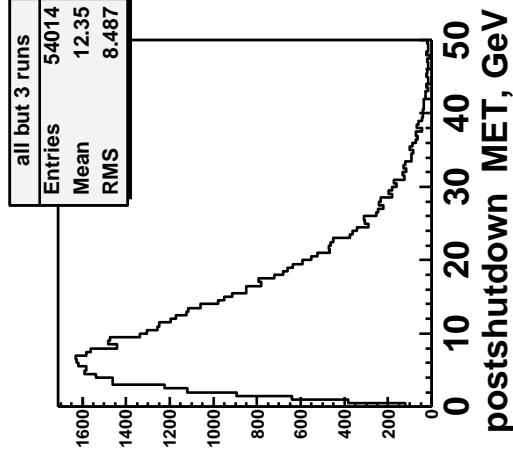
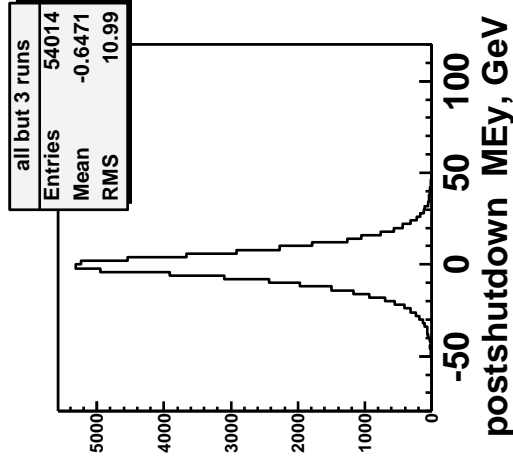
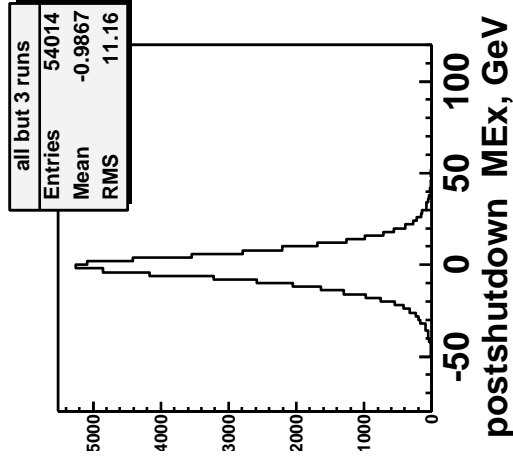
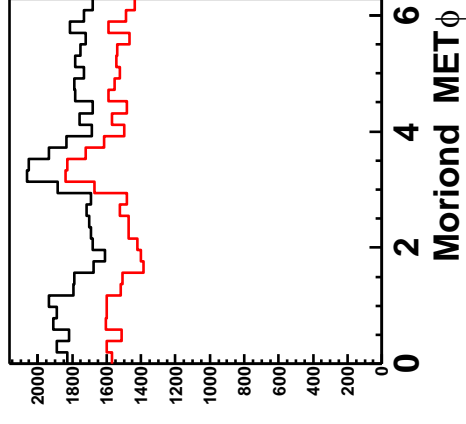
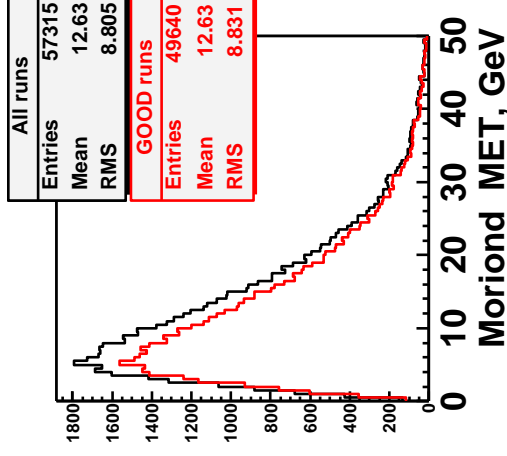
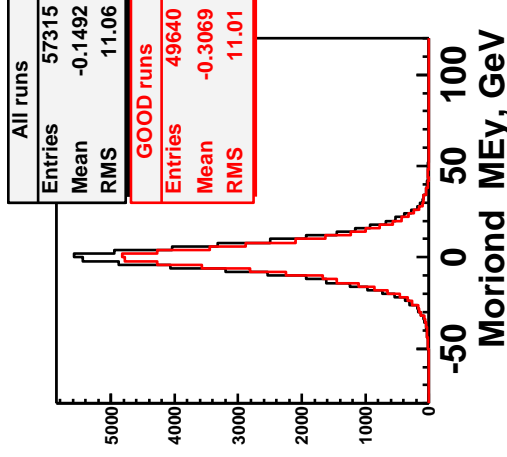
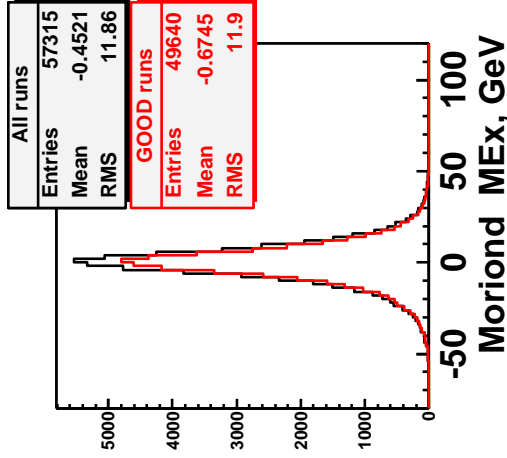


Post-shutdown ↑

corrJCCB (JES corrected (no muon correction) / EM objects excluded) jets of 0.5 cone

Moriond

Missing ET



Post-shutdown

getMETBCorrCALO corrected for JES of JCCB
getMETBCorrCALOxy jets and for electrons

Conclusions

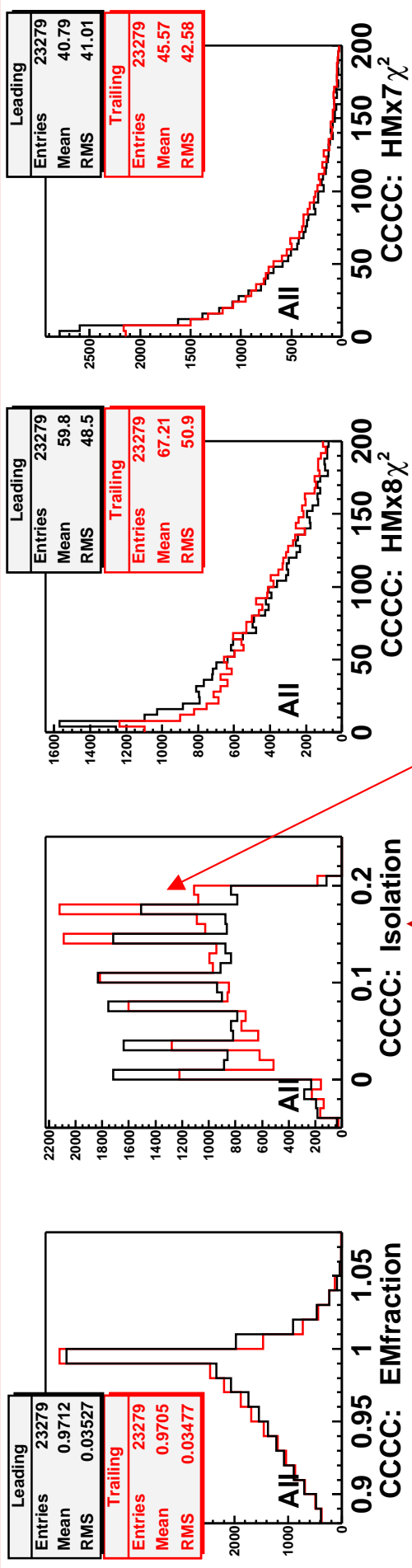
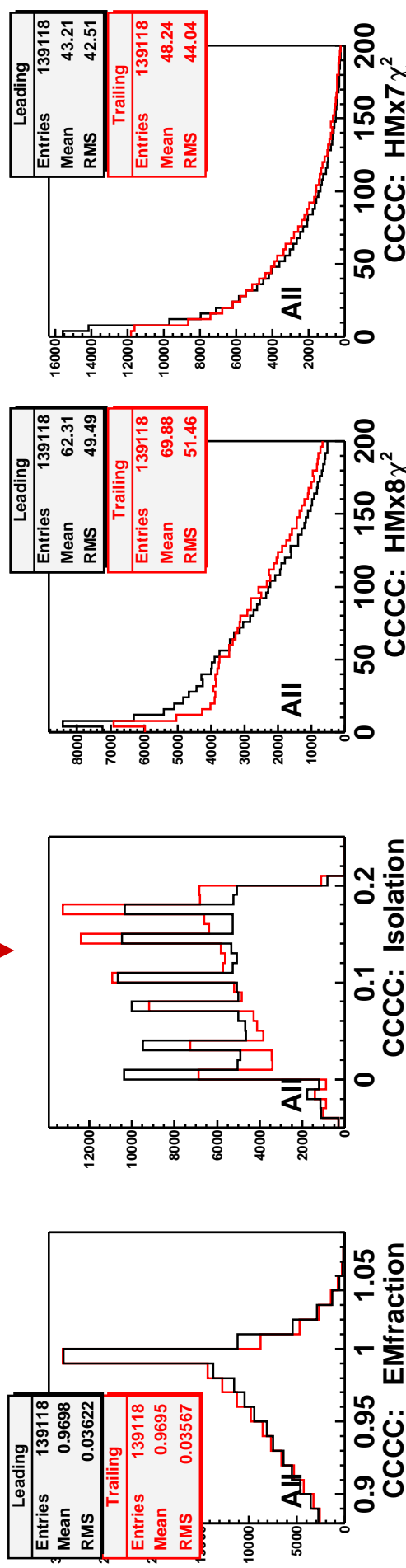
- **from high PT diEM point of view
post-shutdown data
looks similar to Moriond data**
- **phi-patterns need to be understood**

Remaining slides contain:

- **EM variable plots for the topologies not shown earlier:**
 - **CCCC, ECEC plots for EMID and kinematic variables**
 - **CCEC phi plots for different object selections**
- **Looking at checkerboard region in diEM data**

Moriond

CCCC: EMfrac, iso, HMX8, HMX7

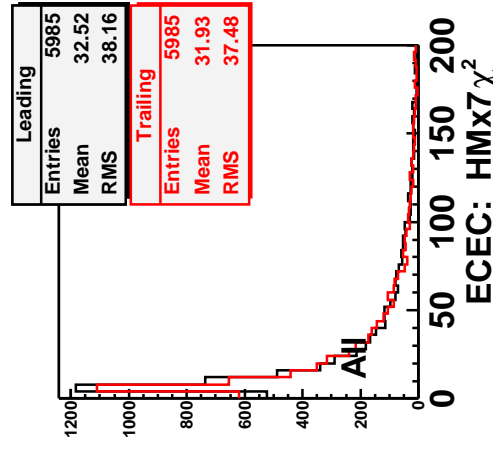
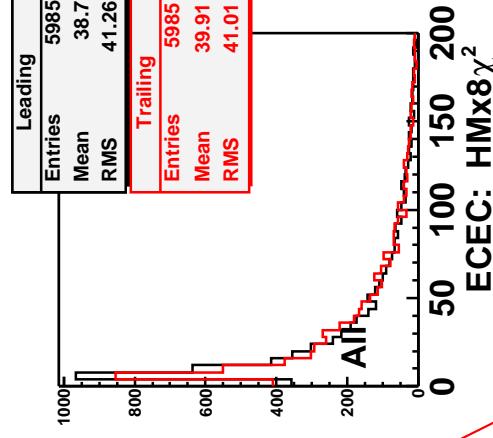
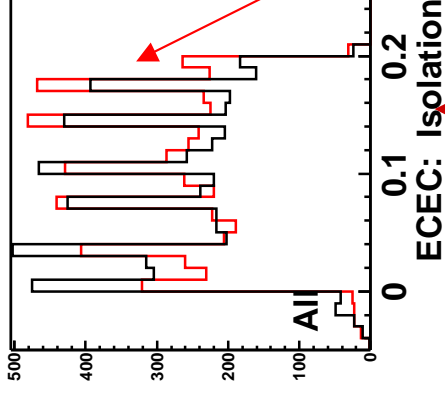
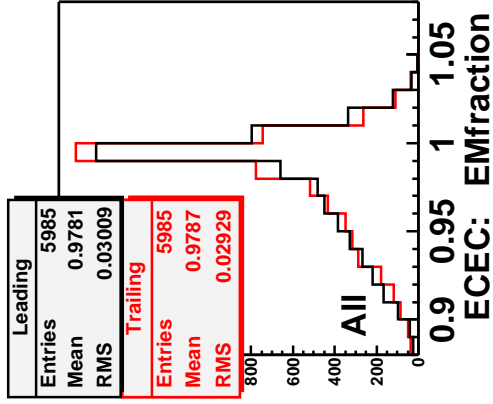
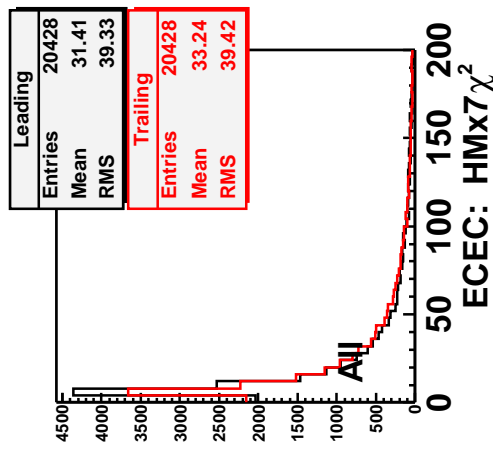
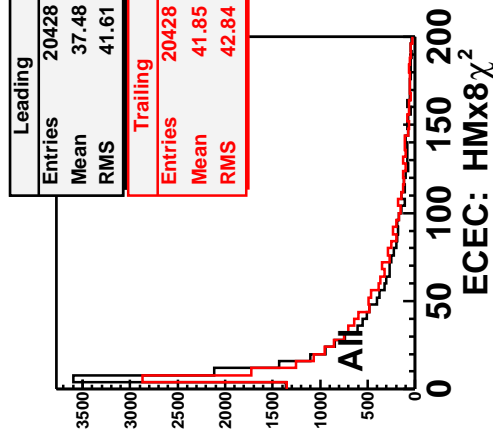
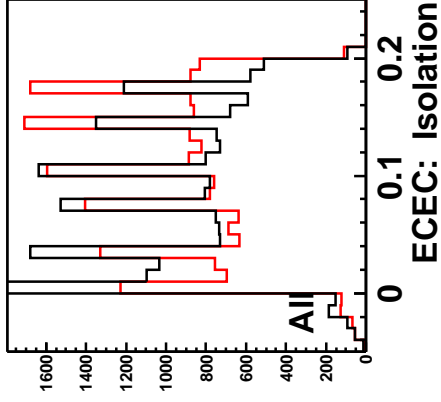
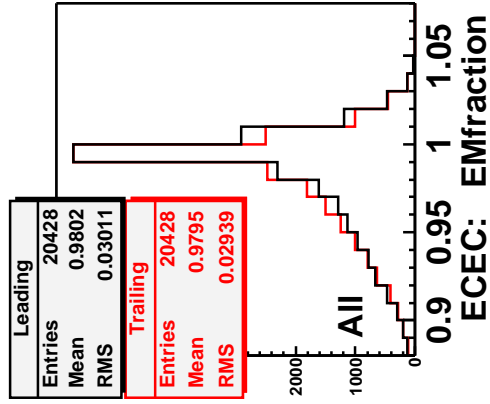


8 bits are used to store iso (vs 16)

Post-shutdown

Moriond

ECEC: EMfrac, iso, HMX8, HMX7

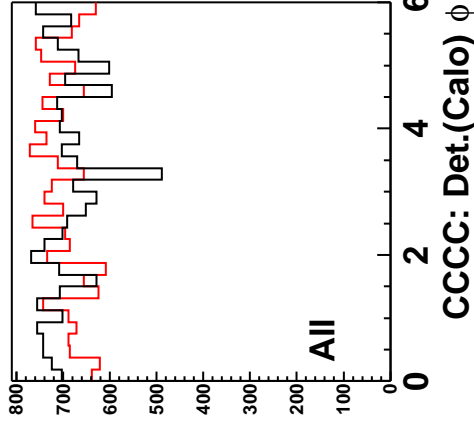
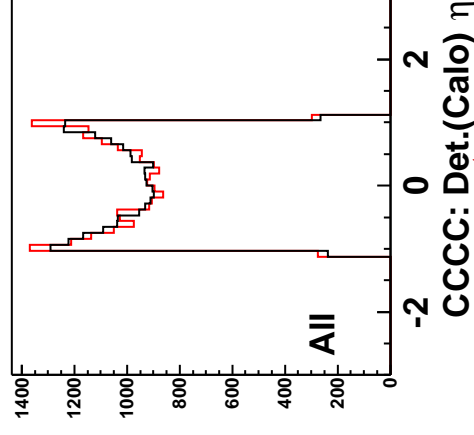
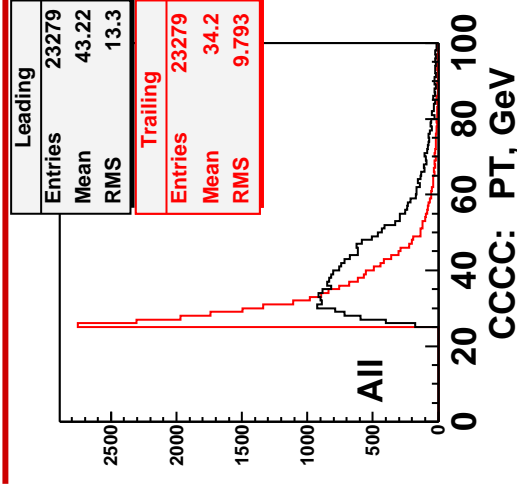
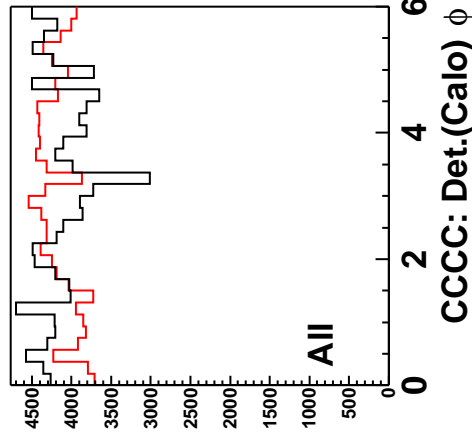
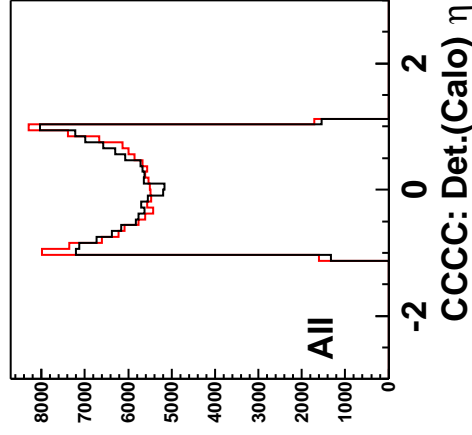
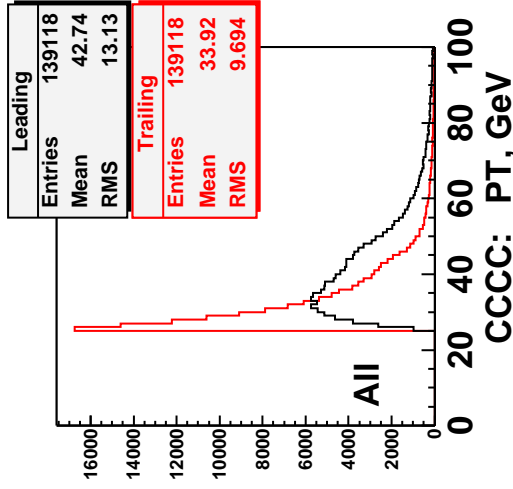


8 bits are used to store iso (vs 16)

Post-shutdown

Moriond

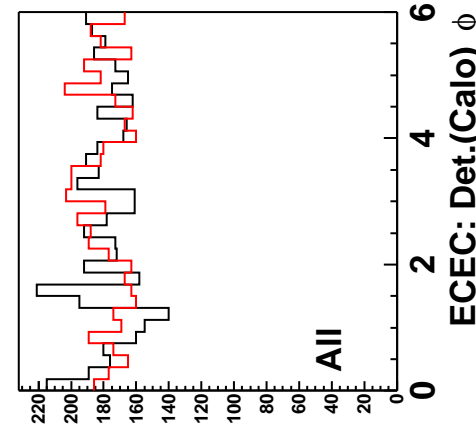
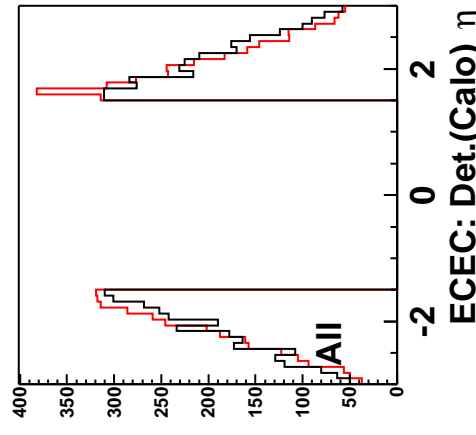
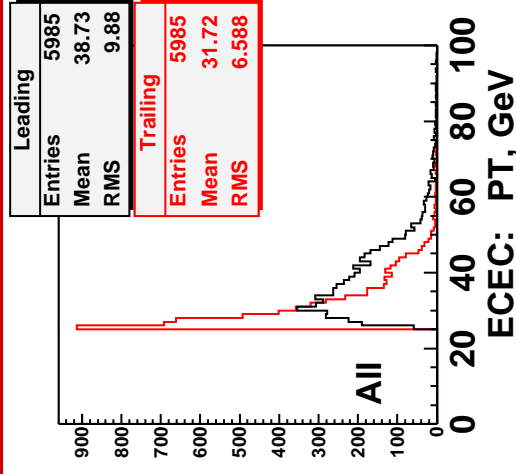
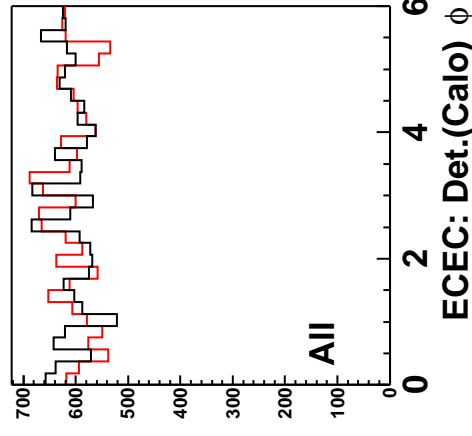
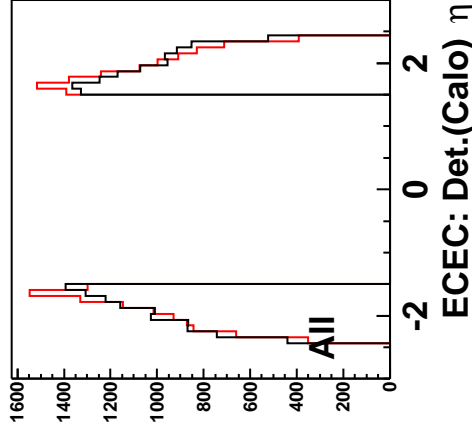
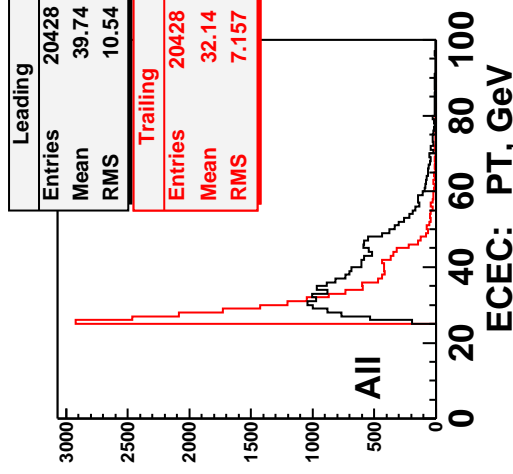
CCCC: PT, eta, phi



Post-shutdown

Moriond

ECEC: PT, eta, phi

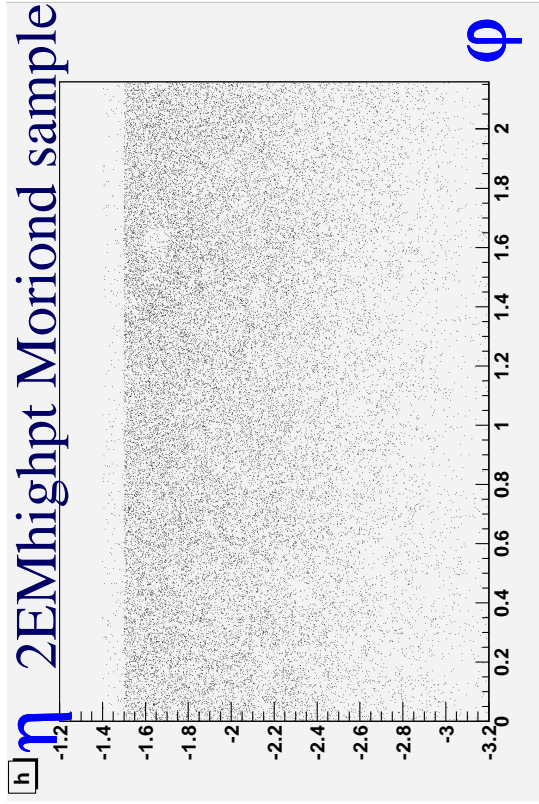


Post-shutdown

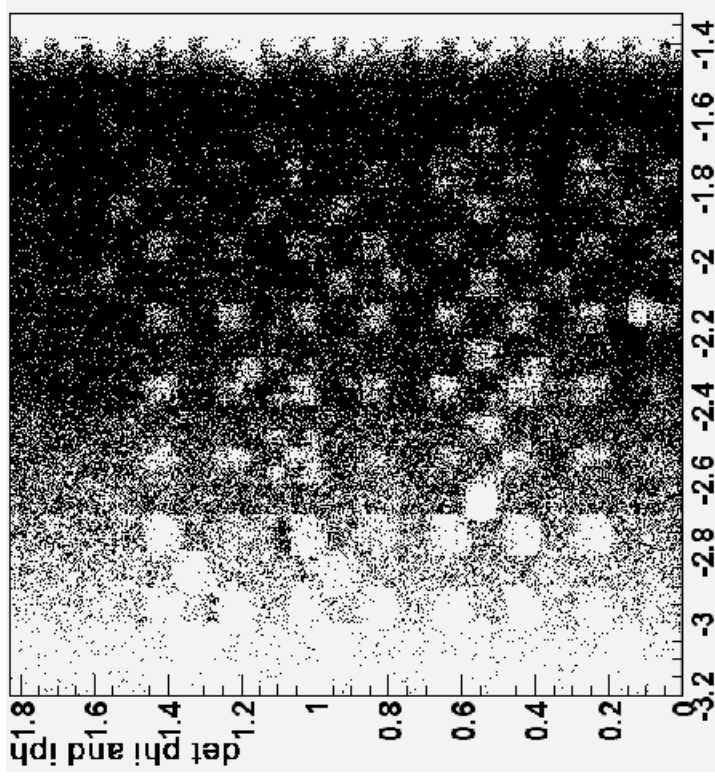
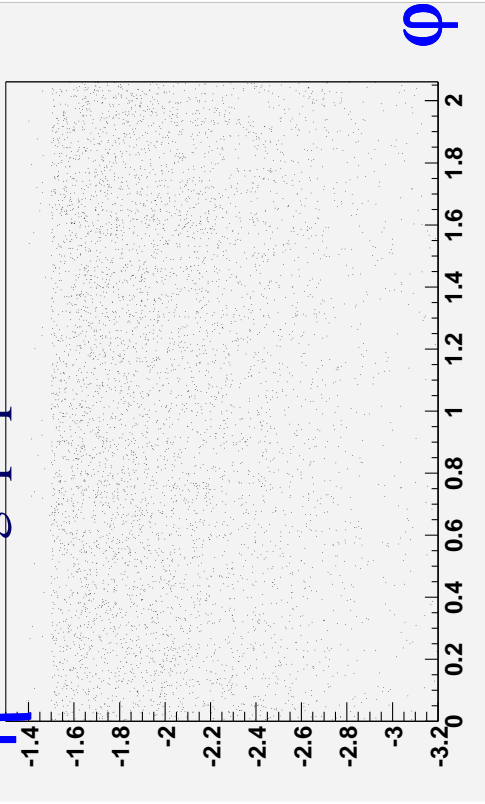
can not see checkerboard eta-phi pattern in diEM data (... due to low statistics ?)

Same conclusion on diEM from Shaohua Fu and Smain Kermiche

John Gardner's plot made with
1EMloose CS sample,
see also Marc Buehler's talk at
Higgs meeting last week ↓

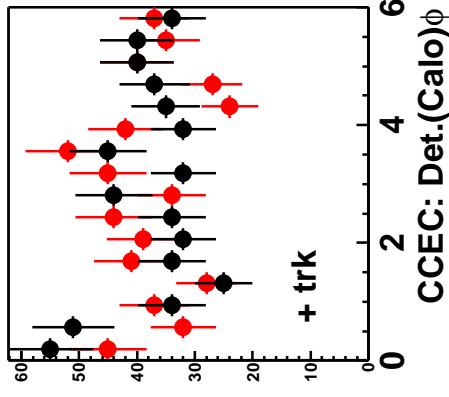
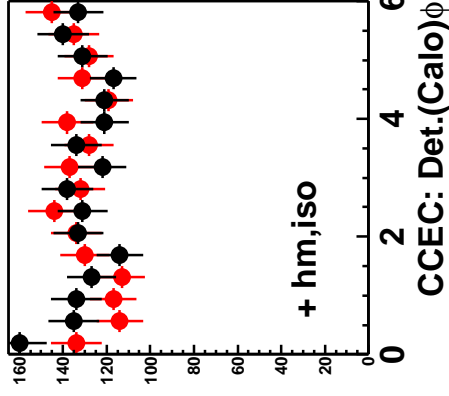
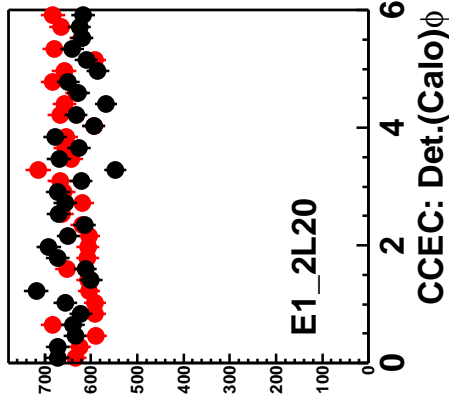
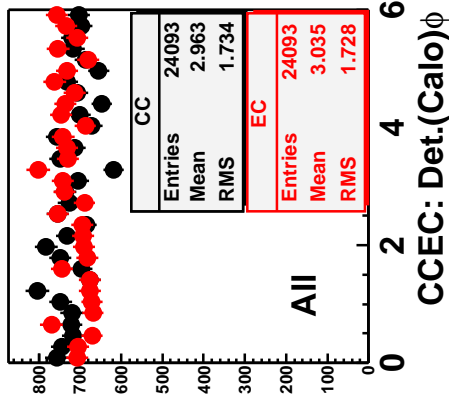
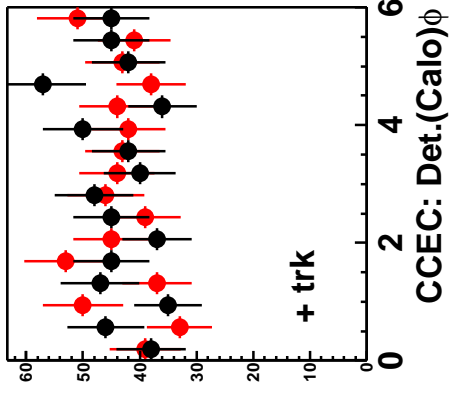
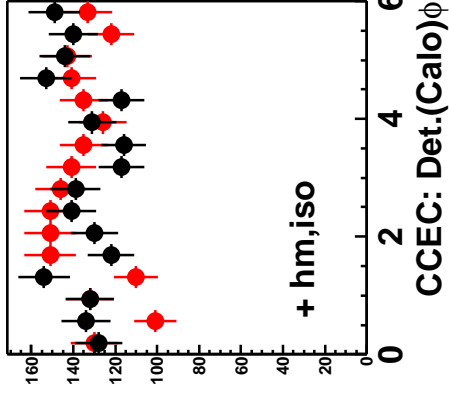
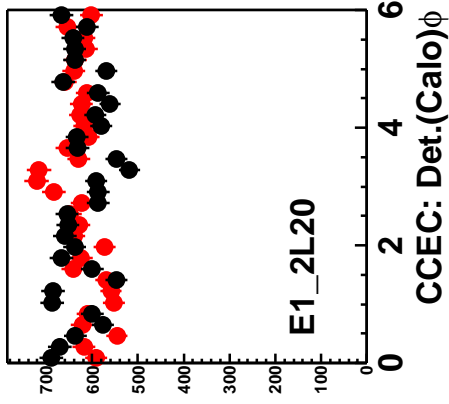
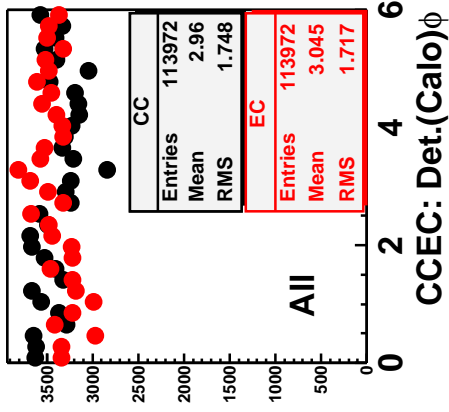


2EMhighpt post-shutdown sample



Moriond

CCEC: DetectorPhi



Post-shutdown