# Status Report on anti-map/phigap/tower9 correction

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# Ongoing Status..

- How to change correction
  - The GFlash(Fortran) code readout corrections from CemCorrAlg.cc(mcfix) and apply anti-corrections on simulation level.
  - Try not to affect electron fiducial region(<21cm) but change the area where the correction to be applied(21-23cm) and raise energy in tower9 and crack region.
- Track & electron cut for this study
- Electron E/p vs. relative phi in tower
- Tower9 distribution with track
- Check on phi crack response with track

# Electron & track cut

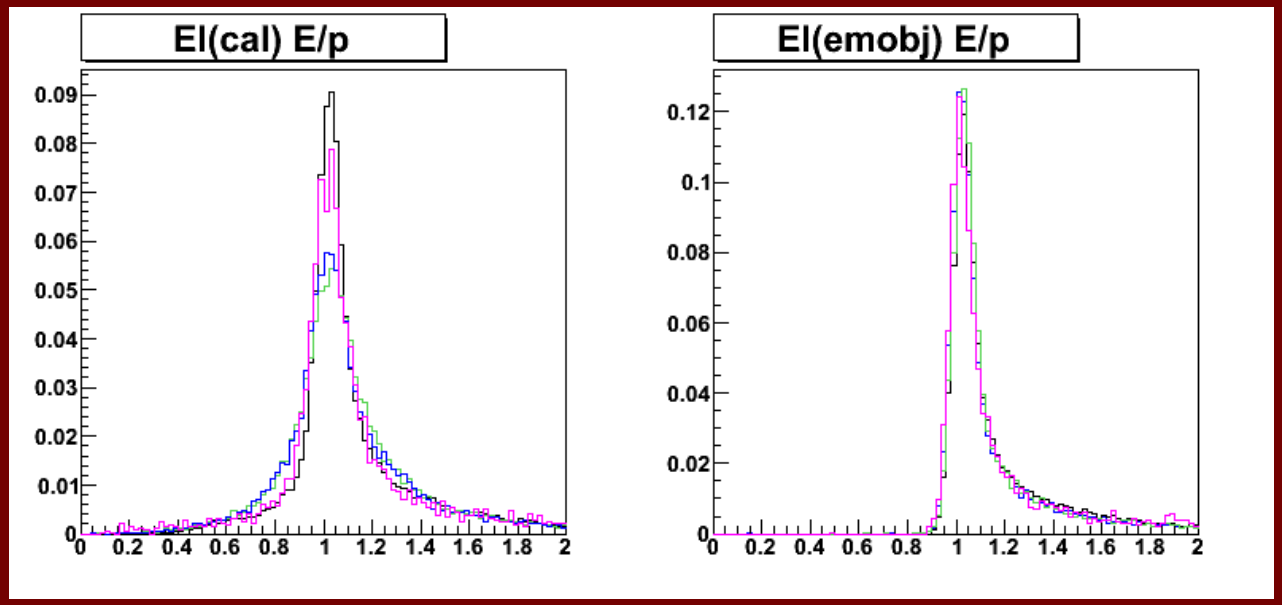
- Electron
  - Tight electron cut
- Track (electron track without requirement of CdfEmObject)
  - No other track within 0.4 cone.
  - Opposite charge to electron's.
  - Track pt > 20 GeV
  - E/p<2.0
  - Had/Em<0.05
  - Energy is reconstructed from 2x2 *caldata*
- We used data from CEM tower 1-6 except tower9.
- For Monte Carlo and data, 82<M(di-el)<102 cut is applied.

# Electron E/p distribution

Color code : ZeeMC, Fake old, Data, Fake new

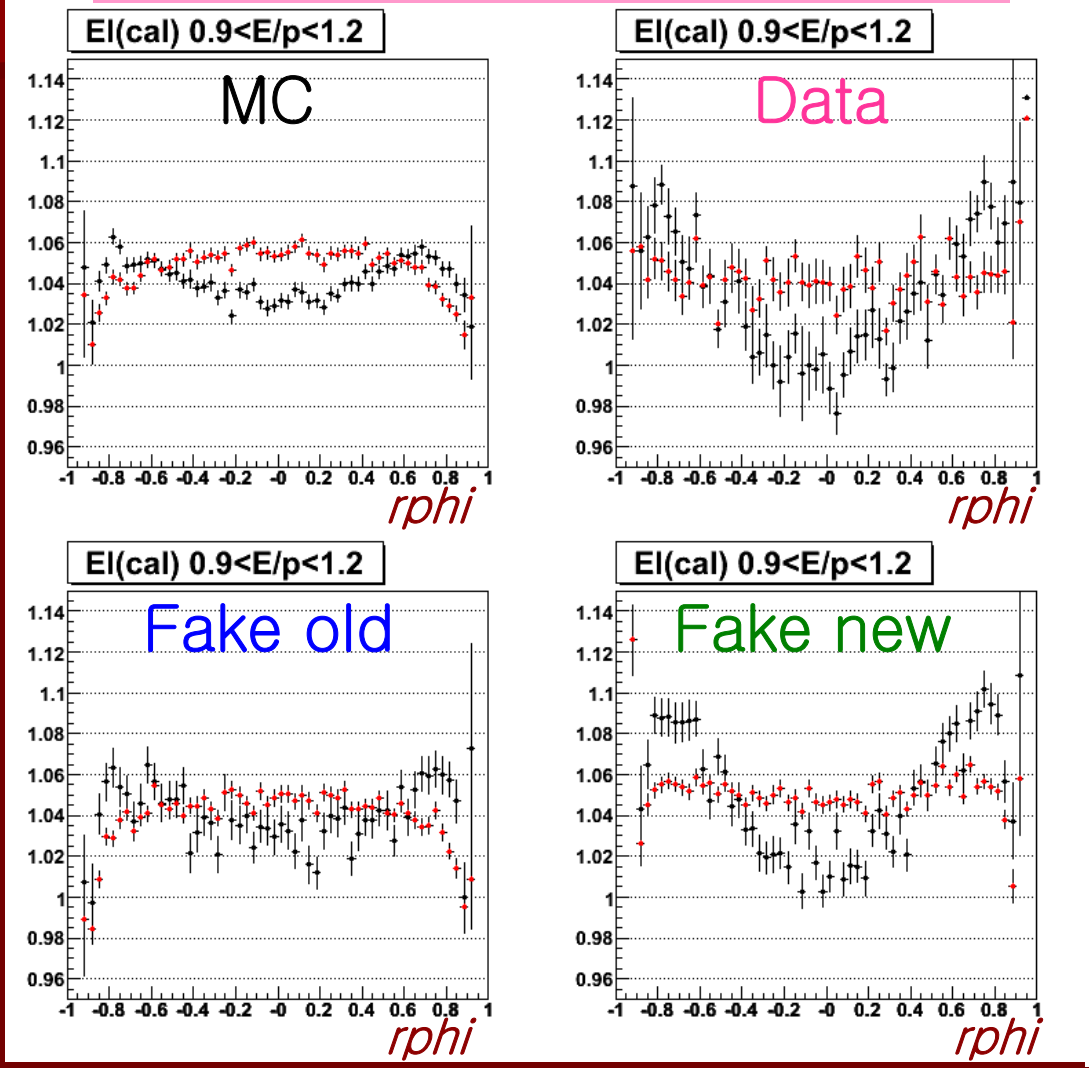
E/p with seed tower *caldata*

E/p from CdfEmObject



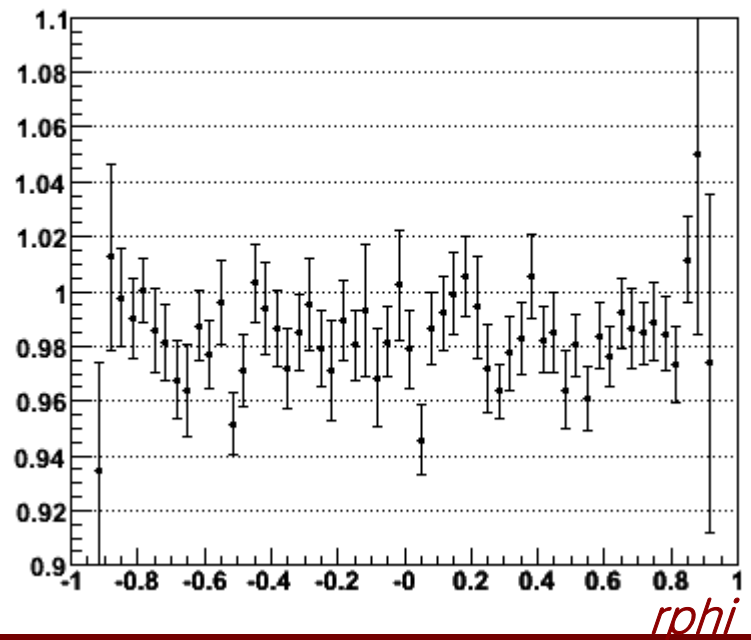
# Electron E/p profile(60bins)

E/p(seed tower) vs. E/p(CdfEmObj)



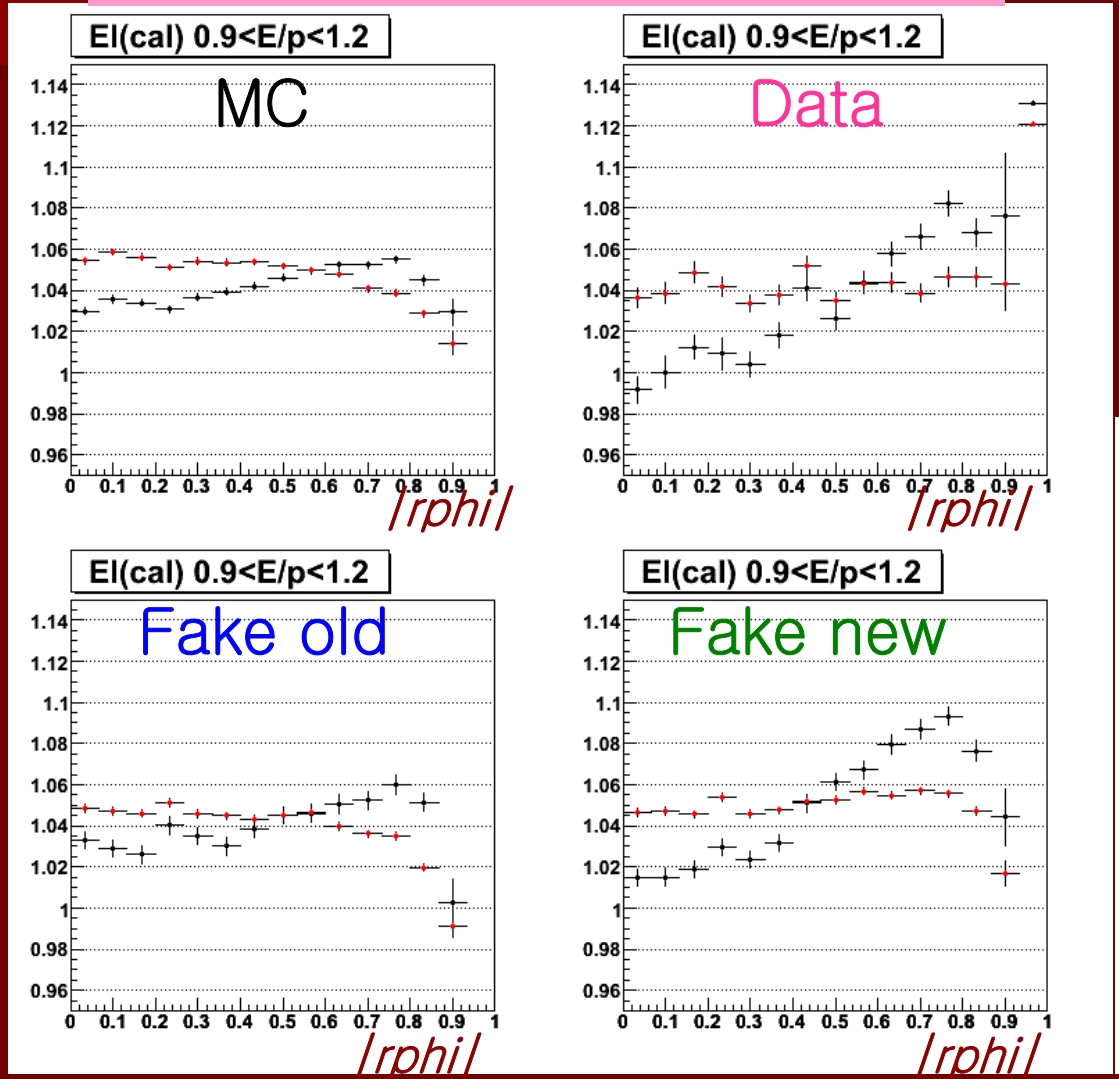

We looked at E/p profile with 0.9<E/p<1.2 cut. The profile Is seen clearly.

E/p(seed tower) data / E/p(seed tower) fake new



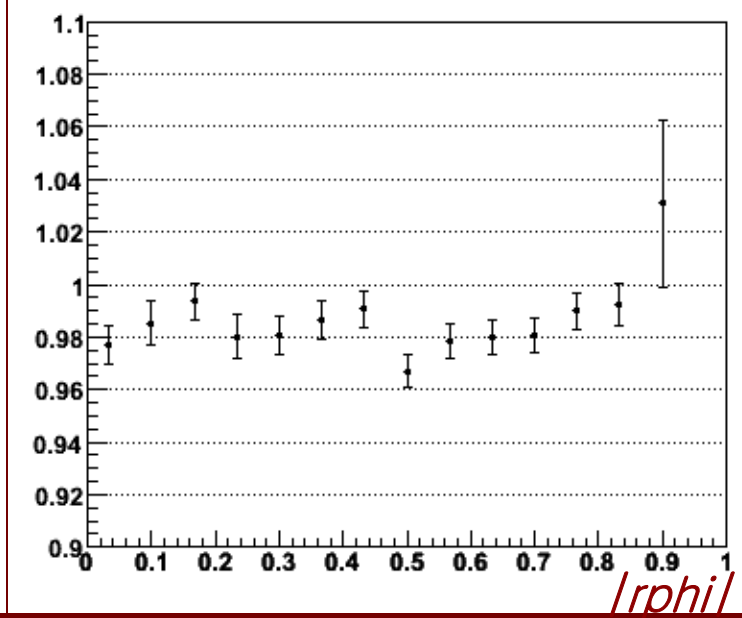
# Electron E/p profile(15bins)

E/p(seed tower) vs. E/p(CdfEmObj)




It shows more general feature with absolute relative phi.

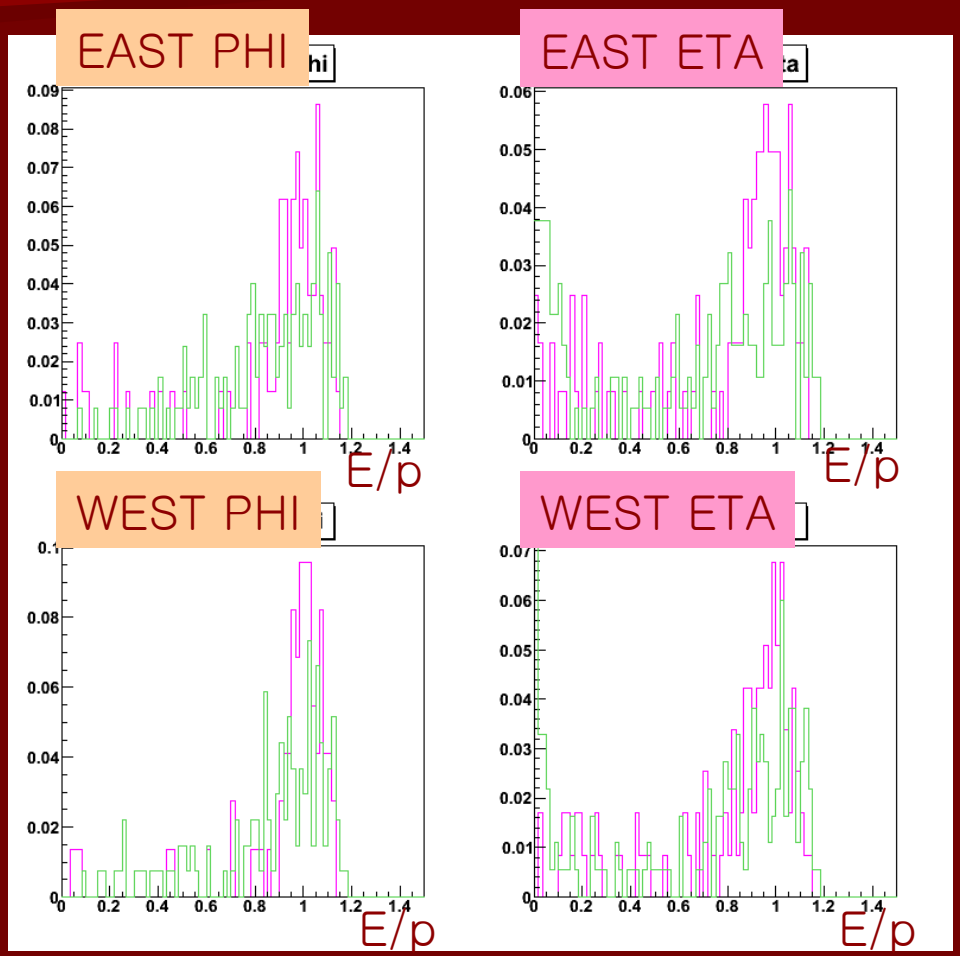
E/p(seed tower) data / E/p(seed tower) fake new

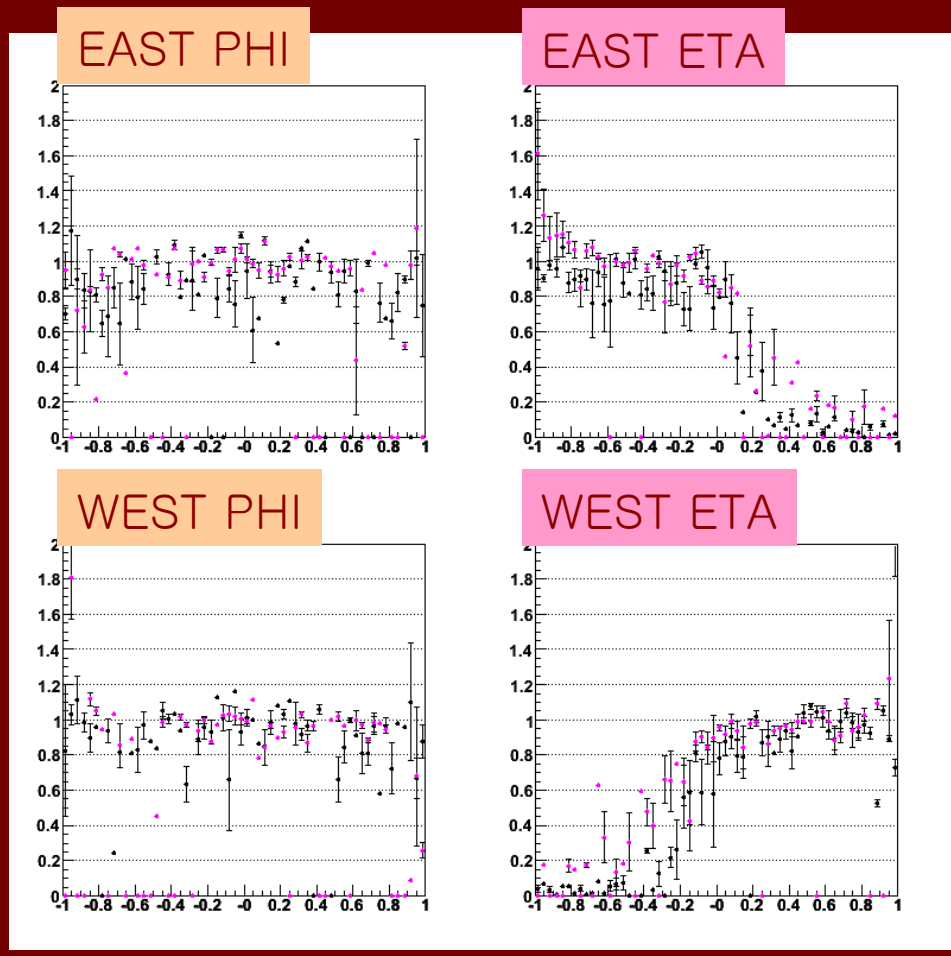


# Tower9 E/p distribution with track

Additional track cut, E/p<1.2, is applied.

Color code: Data, Fake new, EAST, WEST



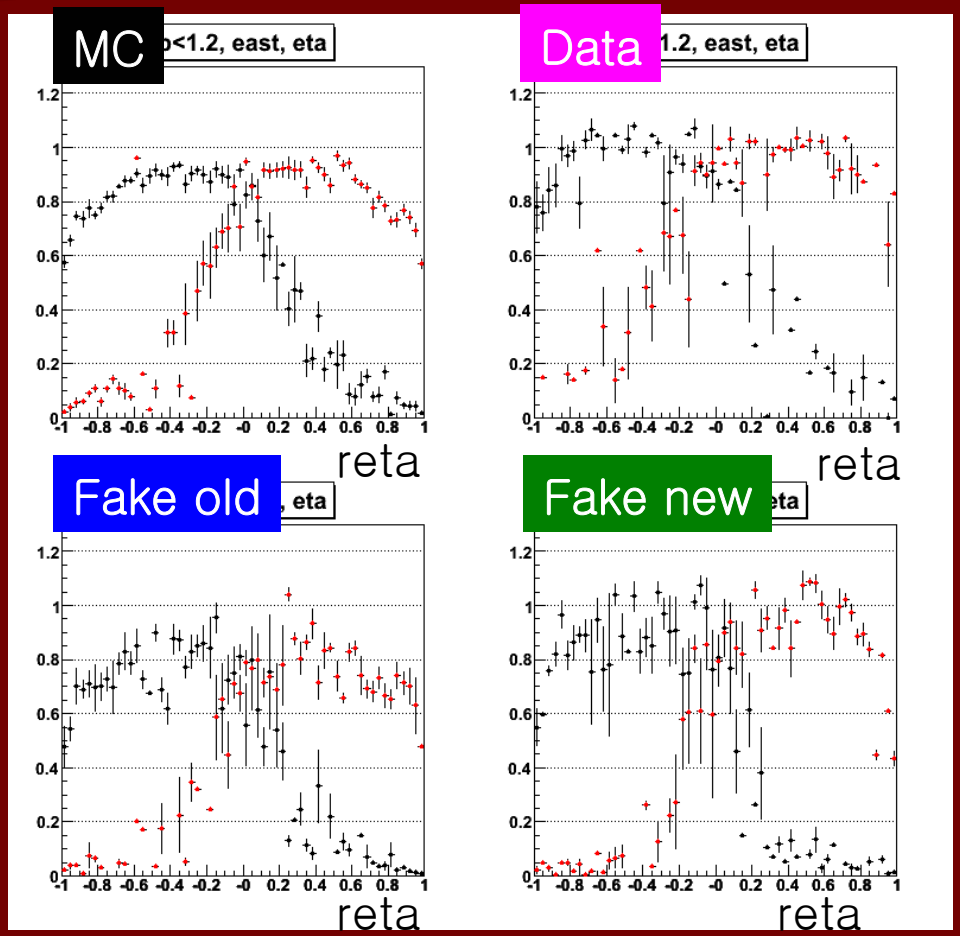



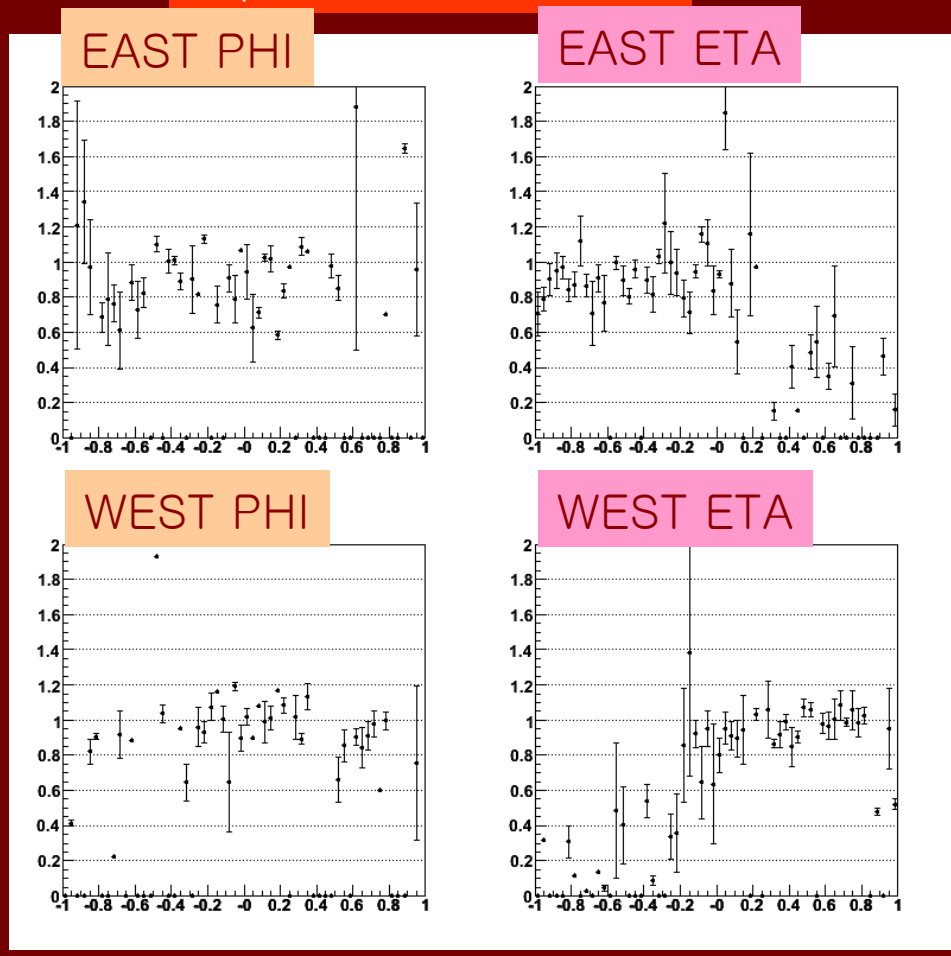
# Tower9 E/p level

$\frac{E/p(tower9)}{E/p(tower1-6)}$

Color code : fake new, data

$\frac{E/p(tower9)\ data}{E/p(tower9)\ fake\ new}$

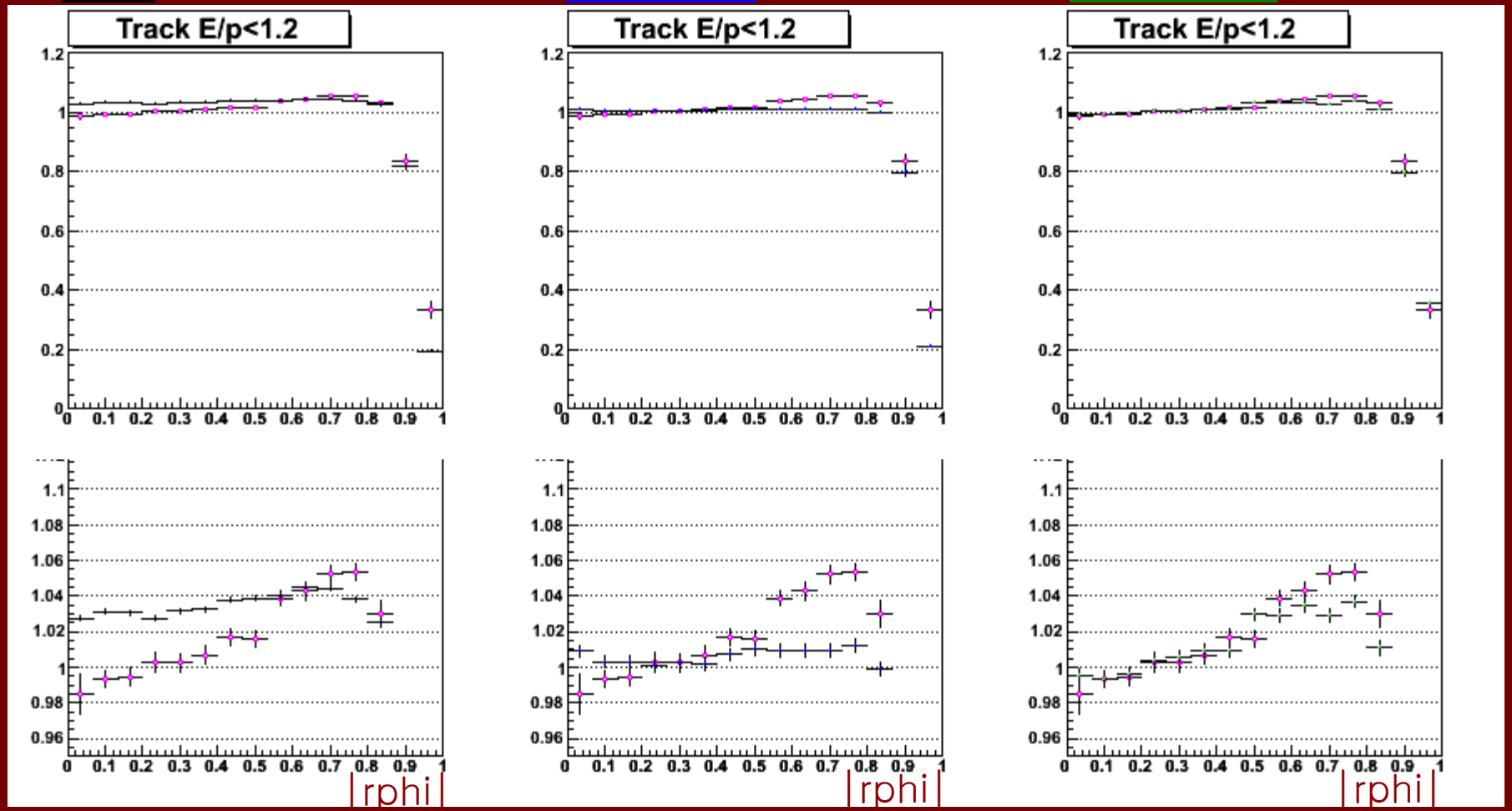


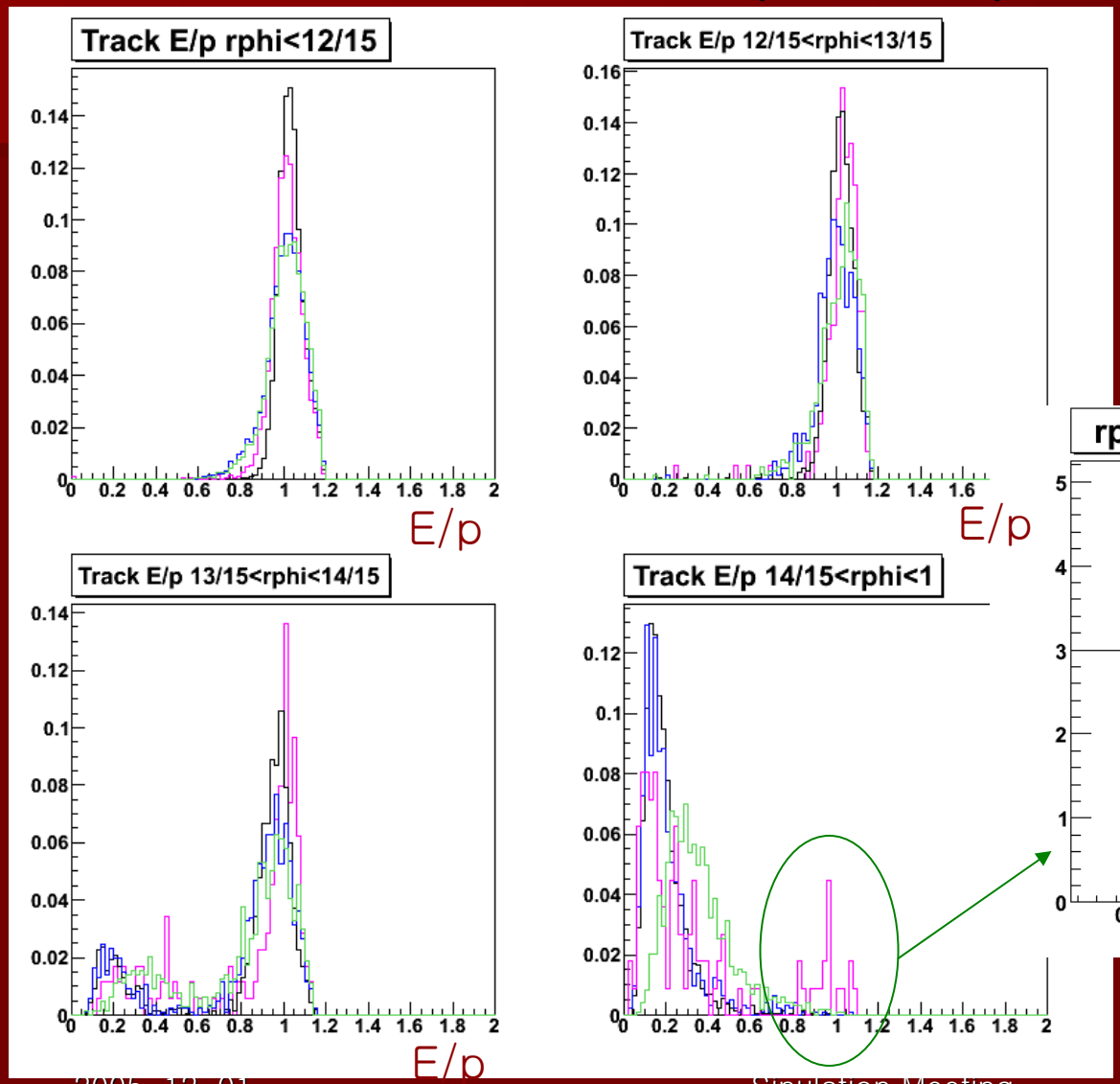
# Phi Crack in CEM

Color code : ZeeMC, Fake old, Data, Fake new

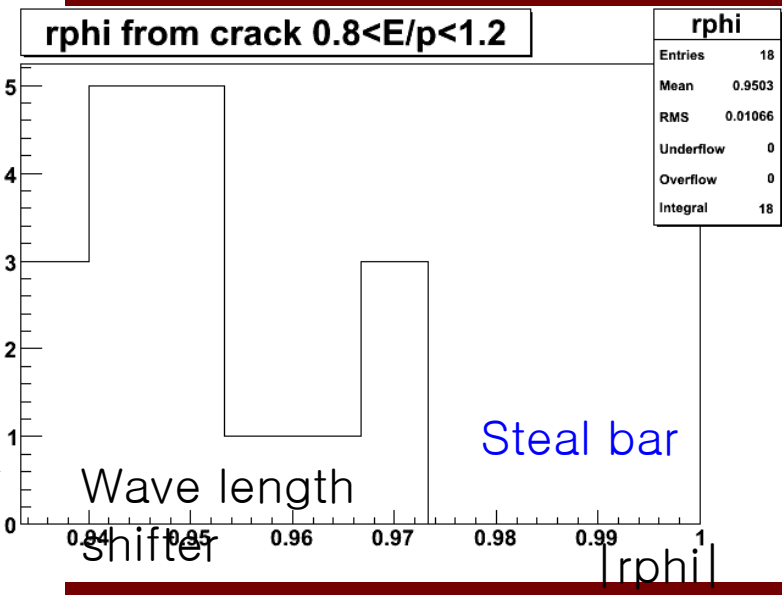
MC | Fake old | Fake new

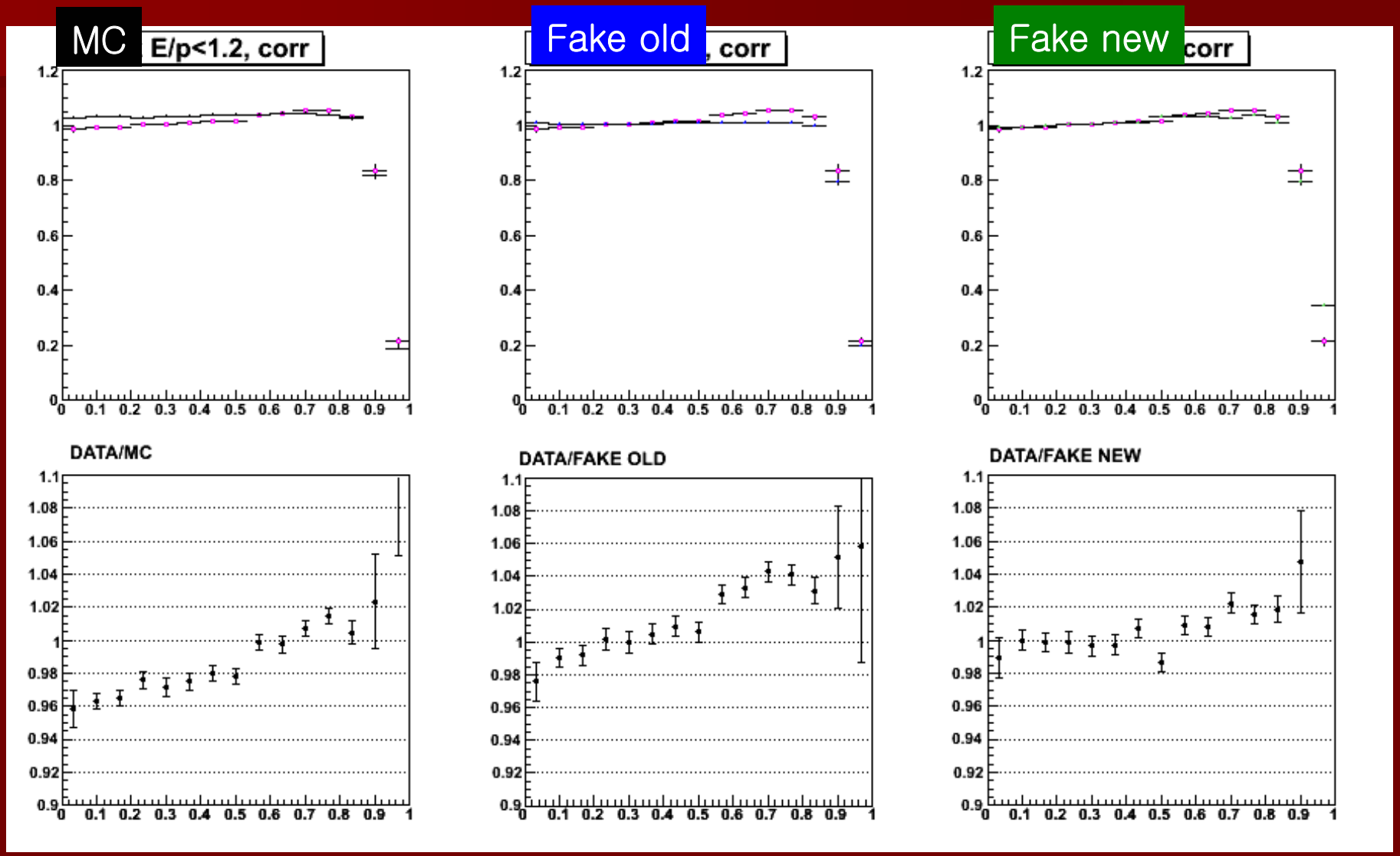


# Track E/p in phi crack




Zoomed into the crack region



# Phi crack check w/o high E/p in data

Color code : ZeeMC, Fake old, Data, Fake new