

-- AstridVauthier - 2015-09-01

## 21 October 2016

### Procedure to merge MC properly:

- see in  
/Users/vauthier/Documents/These/AnalyseGHCorr\_pp\_2014/Input/ChargedNeutral\_NotLeading\_MyAOD/sin
- launch ScalePtHardBinForAllRun.sh: it will execute extractScaleXXPerRun.sh for each run.  
extractScaleXXPerRun.sh take each pT hard bin for a given run number and merge all scaled pT hard bin root file into one root file.
- Merge all one run scaled root file created with extractScaleXXPerRun.sh to obtain the final root file

**Train launched on the grid** pp\_MC\_AOD with smearing pp\_AOD LHC11c

## 25 July 2016

- AnalysisResults\_LHC15sumijMaskTowersByHandpass3.root: output from the grid to have number of events
- AnalysisResults\_LHC15sumijMaskTowersByHand.root: output from the grid to have number of events

## 14 June 2016

Input samples for stat uncertainties studies:

- RecalibrationFactors2012\_10SM\_iter8\_addDCALandThirdsAfterPass2.txt: root file needed as baseline for iteration for calibration coefficient
- output\_calibPi0\_coeffs.txt: output\_calibPi0\_coeffs.txt previous iteration need to be cleaned
- output\_calibPi0\_parameters.txt: output\_calibPi0\_parameters.txt Previous iteration all SMs
- output\_calibPi0\_parameters.txt: output\_calibPi0\_parameters.txt Sample 1
- output\_calibPi0\_parameters.txt: output\_calibPi0\_parameters.txt Sample 2
- LHC15ij\_Sample1TenderOnTimeCutAppliedNoBadMapMask.root:  
LHC15ij\_Sample1TenderOnTimeCutAppliedNoBadMapMask.root
- LHC15ij\_Sample2TenderOnTimeCutAppliedNoBadMapMask.root:  
LHC15ij\_Sample2TenderOnTimeCutAppliedNoBadMapMask.root

## 30 May 2016

Noise peak is smaller with tighter time cuts while pi0 peaks do not change: it will allow us to discriminate real pi0 peaks and noise peaks 😊 Launch trains with inverse time cut to study noise peaks clusters topology.

**Train launched on the grid** Calib with tender on no bad map with inverse time cut

## 26 May 2016

BACK TO CALIBRATION List of weird towers checked by eye for LHC15ij TENDER on + time cut applied (see trains 399 and 400):

- PbTower.rtf: List of problematic towers

Now it is hard to say if noise remains or if we see low mass peak towers

Example where noise peak disappear compared to pass3\_DCALAndThirids: 13\_2\_13, 15\_17\_4, 15\_22\_14, 15\_22\_18, 17\_6\_19

### Train launched on the grid

Calib tender no bad map no mask Calib tender no bad map mask

## 15 Mar 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Do systematics -> ONGOING
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>gamma</sub>gamma histos
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone

### SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING pMC true and RMCDData evolved in the same way -> could it be the cause we see no difference when doing ratio
- Smearing: Now do syst with 2 smearing -> ONGOING

*xE distribution:*

- Track matching -> ONGOING
- UE estimate -> ONGOING Weird: the medium and nominal cones are compatible (when rescaling by the surface) but not the small cone (2 times smaller)
- Energy resolution from ITS +TPC to be implemented to analysis code -> ONGOING

### Train launched on the grid

none

### Talk for 2nd year seminar

## 14 Mar 2016

During WWND: finalize the analysis note -> now wait for second round of comments. p3 hypothesis checked -> need to double signal to obtain something good for signal contamination.

## TO DO LIST

- Check bug in p4 -> ONGOING
- Do systematics -> ONGOING
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Redo sum p<sub>T</sub> and p<sub>T</sub> max in cone studies with lower p<sub>T</sub> bins and per part type to see from where comes the peak at low activity in cone

## SYSTEMATICS

### *Purity:*

- Signal Contamination -> ONGOING pMC true and RMCDData evolved in the same way -> could it be the cause we see no difference when doing ratio
- Smearing: Now do syst with 2 smearing -> ONGOING

### *xE distribution:*

- Track matching -> ONGOING
- UE estimate -> ONGOING Weird: the medium and nominal cones are compatible (when rescaling by the surface) but not the small cone (2 times smaller)
- Energy resolution from ITS +TPC to be implemented to analysis code -> ONGOING

## Train launched on the grid

none

## Talk for 2nd year seminar

First draft done and given to Julien -> see tomorrow to discuss about it

## 26 Feb 2016

## TO DO LIST

- Check bug in p4 -> ONGOING
- Do systematics -> ONGOING
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Redo sum p<sub>T</sub> and p<sub>T</sub> max in cone studies with lower p<sub>T</sub> bins and per part type to see from where comes the peak at low activity in cone

## SYSTEMATICS

### *Purity:*

- Signal Contamination -> ONGOING pMC true and RMCDData evolved in the same way -> could it be the cause we see no difference when doing ratio
- Smearing: Now do syst with 2 smearing -> ONGOING

### *xE distribution:*

14 Mar 2016

- Track matching -> ONGOING
- UE estimate -> ONGOING Weird: the medium and nominal cones are compatible (when rescaling by the surface) but not the small cone (2 times smaller)
- Energy resolution from ITS +TPC to be implemented to analysis code -> ONGOING

**Train launched on the grid** none

## 25 Feb 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Do systematics -> ONGOING
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone

### SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING pMC true and RMCDData evolved in the same way -> could it be the cause we see no difference when doing ratio
- Smearing: Now do syst with 2 smearing -> ONGOING launch new simu with M02>0.1 for smearing

*xE distribution:*

- Track matching -> ONGOING
- UE estimate -> ONGOING Implemented in analysis code, launch trains tonight
- Energy resolution from ITS +TPC to be implemented to analysis code -> ONGOING

**Train launched on the grid** LHC1c,LHC11d: several UE cones Ask for MC for smearing

## 24 Feb 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone

### SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING pMC true and RMCDData evolved in the same way -> could it be the cause we see no difference when doing ratio
- Smearing: Now do syst with 2 smearing -> ONGOING

*xE distribution:*

- Track matching
- UE estimate -> ONGOING Issue with changes in aliphysics
- Energy resolution from ITS +TPC to be implemented to analysis code -> ONGOING

**Train launched on the grid** none

## 23 Feb 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone

### SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING pMC true and RMCDData evolved in the same way -> could it be the cause we see no difference when doing ratio
- Smearing: Now do syst with 2 smearing

*xE distribution:*

- Track matching
- UE estimate -> ONGOING Issue with changes in aliphysics
- Energy resolution from ITS +TPC to be implemented to analysis code

**Train launched on the grid** none

**WWND talk:** APPROVED

## 22 Feb 2016

### TO DO LIST

- Check bug in p4 -> ONGOING

- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone

## SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING pMC true and RMCDData evolved in the same way -> could it be the cause we see no difference when doing ratio
- Smearing -> DONE

*xE distribution:*

- Track matching
- UE estimate -> ONGOING Issue with changes in aliphysics
- Energy resolution for EMCal and tracker -> DONE first dirty trial done
- AOD tracks: hybrids vs TPC only -> DONE

**Train launched on the grid** none

**WWND talk:** Wait for CC approval

## 16 Feb 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone

## SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING pMC true and RMCDData evolved in the same way -> could it be the cause we see no difference when doing ratio
- Smearing -> DONE

*xE distribution:*

- Track matching
- UE estimate -> ONGOING Issue with changes in aliphysics
- Energy resolution for EMCal and tracker -> ONGOING first dirty trial done
- AOD tracks: hybrids vs TPC only -> ONGOING

**Train launched on the grid none**

**WWND talk:** Wait for CC approval

## 15 Feb 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>gammagamma</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone
- Re-check smearing because low -> DONE

### SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING no difference between MCtrue and MC reco for p2 -> no sys
- Smearing -> ONGOING

*xE distribution:*

- Track matching
- UE estimate -> ONGOING Issue with changes in aliphysics
- Energy resolution for EMCal and tracker -> ONGOING
- AOD tracks: hybrids vs TPC only -> ONGOING

**Train launched on the grid Data : no hybrid tracks MC : smearing**

**WWND talk:** Wait for CC approval

## 12 Feb 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions

- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>gamma</sub>gamma histos
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone
- Re-check smearing because low -> ONGOING

## SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING no difference between MCtrue and MC reco for p2 -> no sys
- Smearing -> ONGOING

*xE distribution:*

- Track matching
- UE estimate -> ONGOING Issue with changes in aliphysics
- Energy resolution for EMCal and tracker -> ONGOING
- AOD tracks: hybrids vs TPC only -> ONGOING

**Local lego train test:** Works now

**WWND talk:** Wait for last comments then proposed to ALICE

## 11 Feb 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Check if f<sub>isol</sub> is the same for different M02 regions for one pt bin -> DONE not the same in the two region at high M02 for MC and data -> overestimate purity in our case ADD SYSTEMATIC
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>gamma</sub>gamma histos
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone
- Re-check smearing because low -> ONGOING

## SYSTEMATICS

*Purity:*

- Signal Contamination -> DONE no difference between MCtrue and MC redo for p2 -> no sys. Do it with 10 times more signal
- Smearing



*xE distribution:*

- Track matching
- UE estimate
- Energy resolution for EMCal and tracker
- AOD tracks: hybrids vs TPC only

**Local lego train test:** Work on local with lego train GA\_pp\_AOd that fails on grid -> keep looking to find issue

**WWND talk:** Implement comment from rehearsal

## 8 Feb 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Check if  $f_{\text{isol}}$  is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>gammagamma</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone
- Re-check smearing because low -> ONGOING

### SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING
- Smearing

*xE distribution:*

- Track matching
- UE estimate
- Energy resolution for EMCal and tracker
- AOD tracks: hybrids vs TPC only

**Local lego train test:** Work on local with lego train GA\_pp\_AOd that fails on grid -> keep looking to find issue

**WWND talk** Finished for second group review

## 5 Feb 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Check if  $f_{\text{isol}}$  is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>gammagamma</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal,  $\alpha_{\text{corr}}$ , isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or  $ax+b$  ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone
- Re-check smearing because low -> ONGOING

## SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING
- Smearing

*xE distribution:*

- Track matching
- UE estimate
- Energy resolution for EMCal and tracker
- AOD tracks: hybrids vs TPC only

*Local lego train test:* Work on local with lego train GA\_pp\_AOd that fails on grid -> keep looking to find issue

## 4 Feb 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Check if  $f_{\text{isol}}$  is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>gammagamma</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal,  $\alpha_{\text{corr}}$ , isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or  $ax+b$  ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone
- Re-check smearing because low -> ONGOING

## SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING

- Smearing

*xE distribution:*

- Track matching
- UE estimate
- Energy resolution for EMCal and tracker
- AOD tracks: hybrids vs TPC only

*Local lego train test:* Do not work for now. AnalysisResults.root created but empty (about 200 Ko) and cannot be read

## 3 Feb 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Check if f\_isol is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for Mgamgamma histos
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone
- Re-check smearing because low -> ONGOING

### SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING
- Anti-isolation cut -> DONE No sys after 2.0 GeV/c
- High M02 cut -> DONE No sys using banana shape
- Smearing

*xE distribution:*

- Track matching
- UE estimate
- Purity -> DONE no syst
- Energy resolution for EMCal and tracker
- AOD tracks: hybrids vs TPC only

*Local lego train test:* Do not work for now. AnalysisResults.root created but empty (about 200 Ko) and cannot be read

## 28 Janv 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Check if  $f_{\text{isol}}$  is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal,  $\alpha_{\text{corr}}$ , isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or  $ax+b$  ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone
- Re-check smearing because low -> ONGOING

## SYSTEMATICS

*Purity:*

- Signal Contamination -> ONGOING
- Anti-isolation cut -> ONGOING
- High M02 cut -> ONGOING
- Smearing

*xE distribution:*

- Track matching
- UE estimate
- Purity -> ONGOING
- Energy resolution for EMCal and tracker
- AOD tracks: hybrids vs TPC only

*Pi0 Calibration:*

Add cut to remove exotic clusters

## 27 Janv 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Check if  $f_{\text{isol}}$  is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal,  $\alpha_{\text{corr}}$ , isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or  $ax+b$  ?)
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone
- Re-check smearing because low -> ONGOING

## SYSTEMATICS

28 Janv 2016

*Purity:*

- Signal Contamination -> ONGOING
- Anti-isolation cut -> ONGOING
- High M02 cut -> ONGOING
- Smearing

*xE distribution:*

- Track matching
- UE estimate
- Purity -> ONGOING
- Energy resolution for EMCal and tracker
- AOD tracks: hybrids vs TPC only

## 26 Janv 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Check if f\_isol is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Get cut efficiency for ABCD zones -> DONE for p2 and p3
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone
- Re-check smearing because low -> ONGOING

## 25 Janv 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Check if f\_isol is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Get cut efficiency for ABCD zones -> ONGOING
- Redo sum pT and pT max in cone studies with lower pT bins and per part type to see from where comes the peak at low activity in cone

## 21 Janv 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Check if f\_isol is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for Mgamma hists
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Refine smearing (find function to have ratio very close to one) -> DONE Use random sampling

## 20 Janv 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Check if f\_isol is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for Mgamma hists
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Refine smearing (find function to have ratio very close to one) -> ONGOING Use random sampling

**Simu smearing** Function used : TMath::Landau(x,0.05,0.035) for 33% of clusters expect for [14,16] GeV/c bin where 20% of clusters are smeared

```
TF1 *f_NewSmearing = new TF1("f_NewSmearing","TMath::Landau(x,0.05,0.035)",0,20);
```

## 19 Janv 2016

### TO DO LIST

- Check bug in p4 -> ONGOING
- Check if f\_isol is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for Mgamma hists
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or ax+b ?)
- Refine smearing (find function to have ratio very close to one) -> ONGOING Use random sampling

## 18 Janv 2016

### TO DO LIST

- Put this in analysis note -> DONE wait discussion with Julien
- Check bug in p4 -> ONGOING
- Check if  $f_{isol}$  is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal,  $\alpha_{corr}$ , isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or  $ax+b$  ?)
- Refine smearing (find function to have ratio very close to one) -> ONGOING Use random sampling

### For smearing

Use Landau distribution ( $Landau(x,0.05,0.02)$ ) for random number for only 20% of the clusters. Weird behavior at low M02 where smearing do not depopulate bins: only 15% goes after the pic, but do not explain all the effect.

## 15 Janv 2016

### TO DO LIST

- Put this in analysis note -> ONGOING wait discussion with Julien
- Check bug in p4 -> ONGOING
- Check if  $f_{isol}$  is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal,  $\alpha_{corr}$ , isolation fraction
- Fit ratio MC/data isolation fraction (compatible with a or  $ax+b$  ?)
- Refine smearing (find function to have ratio very close to one) -> ONGOING Use random sampling
- Do ratio MC/data isolation fraction for GJ+JJ mixing -> DONE

## 14 Janv 2016

### TO DO LIST

- Check differences between the 2 .root using for TM residuals study -> DONE No change found in AliPhysics and AliRoot that can explain that. Big changes for TM cut and pT photons spectra.
- Put this in analysis note -> ONGOING wait discussion with Julien
- Check bug in p4 -> ONGOING
- Check if  $f_{isol}$  is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR

- DiPhox
- Do invariant mass plot + invariant mass with 1 direct gamma
- Check MC tag for M<sub>γγ</sub> histos
- Systematics : energy resolution for TPC, ITS and EMCal, alpha\_corr, isolation fraction

## 13 Janv 2016

### TO DO LIST

- Check differences between the 2 .root using for TM residuals study -> DONE No change found in AliPhysics and AliRoot that can explain that. Big changes for TM cut and pT photons spectra.
- Put this in analysis note -> ONGOING wait discussion with Julien
- Check bug in p4 -> ONGOING
- Check if f\_isol is the same for different M02 regions for one pt bin
- Do systematics -> ONGOING
- See cuts applied before DeltaPhi and DeltaEta histograms -> DONE difference is PID cut (check if the cluster does from a photon). Cuts applied for both Cut and No Cut histograms : Energy cut, TOF time cut, NLM cut, fiducial cut, and Z vertex cut
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox

## 12 Janv 2016

### TO DO LIST

- Check differences between the 2 .root using for TM residuals study
- Put this in analysis note -> ONGOING wait discussion with Julien
- Check bug in p4 -> ONGOING
- Check if f\_isol is the same for different M02 regions for one pt bin
- See effect on smeared simu on f\_isol -> DONE weird results: no significant change with smearing. In fact distribution of both isolated and anti-isolated parts are changing in the same way -> no change on f\_isol
- Do systematics -> ONGOING
- See cuts applied before DeltaPhi and DeltaEta histograms
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- DiPhox

## 11 Janv 2016

### TO DO LIST

- Do xE exponential fit with and without I option in fit to have extreme slope values -> DONE No change observed in slope estimate
- Which impact on xE distribution when cut invariant mass window -> DONE there is little difference between what we have in equations (remove all the gamma paired from pi0 and keep all the others contributions) but this not exactly true. See invariant mass peak distribution here : [/Users/vauthier/Documents/These/AnalyseGHCorr\\_pp\\_2014/PurityCalculations/InvariantMassPeakContributi](/Users/vauthier/Documents/These/AnalyseGHCorr_pp_2014/PurityCalculations/InvariantMassPeakContributi)  
As it is not perfectly true we should add a systematic effect to take this discrepancy into account -> do not serve us
- Put this in analysis note -> ONGOING wait discussion with Julien
- Check bug in p4 -> ONGOING



- Check if  $f_{isol}$  is the same for different M02 regions for one pt bin
- See effect on smeared simu on  $f_{isol}$
- Do systematics -> ONGOING
- See cuts applied before DeltaPhi and DeltaEta histograms
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- Draw gauss function in log to see effect on curve -> DONE do not see the same behavior as for TM cut efficiency studies
- DiPhox

## 07 Janv 2016

### TO DO LIST

- Do xE exponential fit with and without I option in fit to have extreme slope values
- Which impact on xE distribution when cut invariant mass window
- Put this in analysis note -> ONGOING
- Check bug in p4 -> ONGOING
- Check if  $f_{isol}$  is the same for different M02 regions for one pt bin
- See effect on smeared simu on  $f_{isol}$
- Do systematics -> ONGOING
- Change plots in AN with sum pt condition for purity -> DONE
- See cuts applied before DeltaPhi and DeltaEta histograms
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- Draw gauss function in log to see effect on curve

## 06 Janv 2016

Efficiency curves done for signal and bkg. They are different for signal and bkg for isolation condition mainly. How to deal with tiny variation on M02 efficiency. Does it mean that the systematic effects due to this parameter are small on purity ? No sure this is what we see.

Prompt photon are negligible in invariant mass.

### TO DO LIST

- Do xE exponential fit with and without I option in fit to have extreme slope values
- See invariant mass peak in simu -> DONE
- Which impact on xE distribution when cut invariant mass window
- Put this in analysis note -> ONGOING
- Check bug in p4 -> ONGOING
- Check if  $f_{isol}$  is the same for different M02 regions for one pt bin
- See effect on smeared simu on  $f_{isol}$
- Do systematics -> ONGOING
- Change plots in AN with sum pt condition for purity
- See cuts applied before DeltaPhi and DeltaEta histograms
- See on simu the electrons contributions in DeltaEta and DeltaPhi distributions
- Check why we cut on DeltaEta DeltaPhi and not DeltaR
- Draw gauss function in log to see effect on curve

## 05 Janv 2016

BONNE ANNÉE !!

### TO DO LIST

- Do xE exponential fit with and without I option in fit to have extreme slope values
- Check exponential fit takes into account barycenter of bins ->DONE good fit option set in fit "I": *Use integral of function in bin instead of value at bin center* found in ROOT documentation
- Invariant mass subtraction : do plot contribution with gamma decay paired and not gamma decay -> DONE now we clearly see the gamma paired contribution is not higher than 15% at low pT. Plots are here:  
[/Users/vauthier/Documents/These/AnalyseGHCorr\\_pp\\_2014/SummaryNotes/PurityJulien/MacrosToDoCheck](/Users/vauthier/Documents/These/AnalyseGHCorr_pp_2014/SummaryNotes/PurityJulien/MacrosToDoCheck)
- See invariant mass peak in simu -> ONGOING
- Which impact on xE distribution when cut invariant mass window
- Put this in analysis note -> ONGOING
- Check bug in p4 -> ONGOING
- Check if f\_isol is the same for different M02 regions for one pt bin
- See effect on smeared simu on f\_isol
- Do systematics -> ONGOING
- Change plots in AN with sum pt condition for purity

### For systematics:

- Efficiency's cuts have been done. Efficiency is the proportion of signal before the cut over the total amount of signal for a given cut distribution see here :  
[/Users/vauthier/Documents/These/AnalyseGHCorr\\_pp\\_2014/PurityCalculations/SystematicsStudies](/Users/vauthier/Documents/These/AnalyseGHCorr_pp_2014/PurityCalculations/SystematicsStudies)
- TM cut gives significantly different efficiency than isolation, anti-isolation and M02 cuts. How to deal with that ?
- Discussed with Julien : REDO TM cuts was not correct -> DONE + do efficiency for M02 for bkg and anti isolation
- Found the old study on residuals. It was a different .root but same result. The behavior disappear when looking at non log scale.

## 15 Dec 2015

Check of normalisation of  $f(xE)$  : for all periods and pt bins Nicolas is 0.96 and p2 is 0.72 -> keep looking if errors

## 14 Dec 2015

### TO DO LIST :

- Check  $\int f(x) dx$  integral is equal to one (normalisation of function)
- Check exponential fit takes into account barycenter of bins
- Invariant mass subtraction : do plot contribution with gamma decay paired and not gamma decay
- See invariant mass peak in simu
- Which impact on xE distribution when cut invariant mass window
- Put this in analysis note
- Check bug in p4

- Check if  $f_{\text{isol}}$  is the same for different M02 regions for one pt bin
- See effect on smeared simu on  $f_{\text{isol}}$

### Discussion

Invariant mass cut : if we cut all the windows we cut gamma decay but also direct gamma. The important thing is to know what's the efficiency of such a cut (is CB dominant or not). If the peak is well defined we will have a little uncertainty in purity estimate at low pt but in other cases we would not gain anything. Add this in analysis note.

Fit on  $f_{\text{isol}}$  can be performed only in M02 regions where the  $\pi^0$  are.

## 1 Dec 2015

### Analysis note

- implementation of Julien's comments done (except purity messy page)
- begin review of inv mass and xE parts

### $\pi^0$ calibration

- restart when time calibration is available
- no more issue for compiling -> try to implement energy plot tomorrow

### Quantum mechanics lectures

- all TDs are prepared
- start thinking about exam

## 26 Nov 2015

Freestyle seminar : use previous slides but lighter and with EV from run 2 + discussion on what's going to happen during run 2 TD4 MQ : cannot simplified matrix element due to CNM. (Lagrangian is not the same for lonely neutron and neutron in tritium). Tensorial product :  $A_{\text{cross}B} = [a_i, jB]$

## 25 Nov 2015

### LED runs

`ampSig[]` is not empty just before `treeEv->Fill()`. Hence I suspect there is a problem while filling, maybe due to declaration or instantiation of the branch ?

Try to implement Energy distribution for problematic towers but cannot test in local mode. AliPhysics do not compile due to `SetTimeCalibration()` function in `AliEMCALClusterizer` and `IsTimeCalibrationOn` in `'AliEMCALRecParam`. Wait until new tag to see if it compile, otherwise send an email to taskforce

## 24 Nov 2015

Fake dead regions do not change calibration factor -> no bias seem to be given with towers masked



/data2/alice/arbore

## DONE

- Etretat talk + état de frais
- 2 first TD for MQ + 5 first lectures chapters
- Materials for systematics for purity : ratio for anti isolation cut and M02 dependence are done. TM residuals also done --> RUN WITH 1,2 and 3 sigma the analysis
- p4 : the discrepancy does not come from task change but file change --> I'm afraid it will require a lot of investigation to understand this
- Analysis note : Physics motivation added, try to install DiPHOX (Nicolas did it on LPSC servers)

## To Do list

- Do conversion with boost cinematic
- One GRID issue fixed : run simu with smearing
- Scale sum pT and pT lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Add on the analysis task a TH1F for M02 distribution
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)
- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD

## 25 Sept 2015

Stat for EMCal/DCal with L0 trigger : 155M/88M need to wait for calibration

Start talk for QGP France

## To Do list

- Do conversion with boost cinematic
- One GRID issue fixed : run simu with smearing
- Scale sum pT and pT lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Add on the analysis task a TH1F for M02 distribution
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)
- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD

## 24 Sept 2015

Stat for EMCal/DCal with L0 trigger : 155M/88M need to wait for calibration

## To Do list

- Put pi0 scaling factor on isolation fraction data vs MC comparison --> DONE
- Do conversion with boost cinematic
- One GRID issue fixed : run simu with smearing
- Scale sum pT and pT lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Add on the analysis task a TH1F for M02 distribution
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)

- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD

## 23 Sept 2015

run 378 in PWGGA\_PP\_MC is correct --&gt; look at the parameters and all dependencies to see any difference. Mauro pulled PhysicsSelection dependency out of EMCALTender wagon. Now it put it back it works fine -YEAAAAAAH-

### To Do list

- Understand issue with GRID : the histograms do not pass cut in data and the histos are empty for MC --> DONE due to PhysicsSelection not in EMCALTender dependency
- Put pi0 scaling factor on isolation fraction data vs MC comparison
- Do conversion with boost cinematic
- One GRID issue fixed : run simu with smearing
- Scale sum pT and pT lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Add on the analysis task a TH1F for M02 distribution
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)
- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD

## 22 Sept 2015

run 378 in PWGGA\_PP\_MC is correct --&gt; look at the parameters and all dependencies to see any difference.

Stat for EMCal/DCal with L0 trigger : 153M/87M need to wait for calibration

### Presentation at PWG\_GA

link to presentation : [click here](#) For us signal = prompt photons + fragmentation photons but they are negligible according to PYTHIA 6

### To Do list

- Understand issue with GRID : the histograms do not pass cut in data and the histos are empty for MC --> ON GOING
- Put pi0 scaling factor on isolation fraction data vs MC comparison
- Do conversion with boost cinematic
- One GRID issue fixed : run simu with smearing
- Scale sum pT and pT lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Add on the analysis task a TH1F for M02 distribution
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)
- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD

## 18 Sept 2015

### To Do list

- Understand issue with GRID : the histograms do not pass cut in data and the histos are empty for MC --> ON GOING
- Put pi0 scaling factor on isolation fraction data vs MC comparison
- Do conversion with boost cinematic
- One GRID issue fixed : run simu with smearing
- Scale sum pT and pT lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Add on the analysis task a TH1F for M02 distribution
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)
- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD

## 17 Sept 2015

### To Do list

- Understand issue with GRID : the histograms do not pass cut in data and the histos are empty for MC --> ON GOING
- Scale sum pT and pT lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Add on the analysis task a TH1F for M02 distribution
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)
- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD

## 16 Sept 2015

Talk for PWG\_GA done

For GRID : when running ana.C with mGRID with AddTaskGammaHadronCorrelation gives empty histograms. Try with AddTaskCaloTrakCorr, results should be available tomorrow

### To Do list

- Understand issue with GRID : the histograms do not pass cut in data and the histos are empty for MC --> ON GOING
- Compare f\_isol for Pi0Decay, EtaDecay, Pi0 and Eta with data --> DONE
- Scale sum pT and pT lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Add on the analysis task a TH1F for M02 distribution
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)
- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD

## 15 Sept 2015

### To Do list

- Understand issue with GRID : the histograms do not pass cut in data and the histos are empty for MC --> ON GOING
- Compare f\_isol for Pi0Decay, EtaDecay, Pi0 and Eta with data --> ON GOING
- Scale sum pT and pT lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.

- Add on the analysis task a TH1F for M02 distribution
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)
- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD

## 14 Sept 2015

Compare  $f_{\text{isol}}$  to see if the invariant mass cut could be interesting to understand the shape of  $f_{\text{isol}}$  vs M02. We already state that the invariant mass cut allows to gain only 10% in at low  $p_T$ .

### To Do list

- Compare  $f_{\text{isol}}$  for Pi0Decay, EtaDecay, Pi0 and Eta with data --> ON GOING
- Scale sum  $p_T$  and  $p_T$  lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Add on the analysis task a TH1F for M02 distribution
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)
- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD

## 11 Sept 2015

Second iteration on Purity note

Note on purity sent to Julien, Christophe and Gustavo.

### To Do list

- Compare  $f_{\text{isol}}$  for Pi0Decay, EtaDecay, Pi0 and Eta with data --> ON GOING
- Scale sum  $p_T$  and  $p_T$  lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Add on the analysis task a TH1F for M02 distribution
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)
- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD

## 10 Sept 2015

### To Do list

- Compare  $f_{\text{isol}}$  for Pi0Decay, EtaDecay, Pi0 and Eta with data --> ON GOING
- Scale sum  $p_T$  and  $p_T$  lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Add on the analysis task a TH1F for M02 distribution
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)
- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD

## 09 Sept 2015

For the analysis note



- Take attention to explain very well that  $f_{\text{isol}} = N_{\text{isol}} / (N_{\text{isol}} + N_{\text{anti isol}})$  for us

### To Do list

- Compare  $f_{\text{isol}}$  for Pi0Decay, EtaDecay, Pi0 and Eta with data --> ON GOING
- Scale sum pT and pT lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Subtract pi0 lost pair from pi0 decay in SumPtInConePerPartType.C --> DONE
- Do correction factor for p3 (add 1-pMC truth) in .root --> DONE
- Add bkg bin = 5 for IsoFraction\*Summary --> DONE
- Change YTitle sur right plot on EvolutionLambda0PerPartType --> DONE
- Add on the analysis task a TH1F for M02 distribution
- Check IsoFractionLambda0PerPartTypeSummary : why bkg 4 and 6 are so similar --> DONE not the same when you look carefully and the code is OK
- Look at the photo-conversion (see the difference between clusters behind TRD support frame ...)
- Check with Gustavo SetFirstModuleTRD in analysis tasks configuration
- Do histogram in M02 for SM (0-3) and (4-9) with Frame +TRD and without Frame and TRD
- Do M02 distribution for  $N_{\text{iso}}$  and  $N_{\text{anti iso}}$  (allows to see why we have pi0 merged contrib at low M02 for  $f_{\text{isol}}$ ) --> DONE
- Re-do EvolutionLambda0PerPartType with  $N_{\text{iso}} / N_{\text{anti iso}}$  only --> DONE

## 08 Sept 2015

### To Do list

- Compare  $f_{\text{isol}}$  for Pi0Decay, EtaDecay, Pi0 and Eta with data --> ON GOING
- Scale sum pT and pT lead distribution by number of trigger particles --> cannot be done for now because we don't have the proper histograms to do so.
- Subtract pi0 lost pair from pi0 decay in SumPtInConePerPartType.C
- Do correction factor for p3 (add 1-pMC truth) in .root --> ON GOING
- Change AliIsolationCut::kPtThresIC and AliIsolationCut::kNeutralAndCharged by number and test if it works --> DONE replace by 0 and 0 (see AliIsolationCut.h) It works on PWG\_PP, will be test on PWG\_GA
- 2nd year PhD --> DONE
- Run jobs on the grid --> DONE

## 07 Sept 2015

Discuss with Gustavo about problem to run on GRID. It seems the problem could comes from AliIsolationCut::kPtThresIC and AliIsolationCut::kNeutralAndCharged. Will replace this by the proper number directly

### To Do list :

- Compare  $f_{\text{isol}}$  for Pi0Decay, EtaDecay, Pi0 and Eta with data --> ON GOING
- Scale sum pT and pT lead distribution by number of trigger particles
- Look at 3 same pages in IsoFractionEvolutionPtSummary.pdf --> DONE was due to the previous code where I used TH2F and project in 3 zones in M02
- Remove plots Dec\_High below 16 GeV/c --> DONE
- Do correction factor for p3 (add 1-pMC truth) in .root
- Change AliIsolationCut::kPtThresIC and AliIsolationCut::kNeutralAndCharged by number and test if it works --> ON GOING replace by 0 and 0 (see AliIsolationCut.h) It works on PWG\_PP, will be test on PWG\_GA

- 2nd year PhD --> ON GOING
- Run jobs on the grid --> ON GOING

## 05 Sept 2015

First draft for note on purity done : \* Here

## 02 Sept 2015

### To be discussed

- Looking at ATLAS paper for prompt photons xsection : it seems they also choose sum pT. Regarding pT max and sum pT distributions it seems pT max will be more efficient to cut decays photons. re look at this to be sure
- Why isolation fraction are different using TH2F pTLead vs M02 instead of TH1F pTLead only ?

### To Do list :

- Compare f\_isol for Pi0Decay, EtaDecay, Pi0 and Eta with data
- 2nd year PhD --> ON GOING
- Run jobs on the grid --> ON GOING
- Isolation fractions vs M02 per particle type + compute the total isolation fraction --> DONE
- Check decays are taken in the isolation cone --> DONE  
(see in AddTaskGammaHadronCorrelation.C you have SwitchOnSelectPairInCone)

## 01 Sept 2015

Start daily logbook :

- Yesterday discussion with Julien : plan for next months
- In 2 weeks : first draft of AN
- November (beginning) : submit AN
- In 2 weeks : first draft for Etretat

### To Do list :

- Double ratio (correction factor in p2 and p3) with correct cuts --> DONE
- sum pT, pT max distribution for MC and data --> DONE
- Check what EtaDecay and Pi0Decay labels stand for --> DONE In Pi0Decay and EtaDecay you have single and paired gamma decay (see in PWG/CaloTrackCorrBase/AliMCAnalysisUtils.cxx in function CheckOriginInAOD)
- Change YTitle in EvolutionPtSummary --> DONE
- Compare f\_isol for Pi0Decay, EtaDecay, Pi0 and Eta with data
- QGP France 2015 --> DONE
- 2nd year PhD --> ON GOING
- Run jobs on the grid --> ON GOING

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