

# Table of Contents

Photon hadron correlations task list.....	1
---	---

# Photon hadron correlations task list

- **pp run periods selection**
  - ◆ QA calorimeter : *Dana (task 1), Xiangrong*
  - ◆ Run selection with PHOS triggered : *Renzhuo (task 1)*
  - ◆ QA TPC : What is the TPC performance? Check RTC / run
- **pp (PbPb) charged track selection, ESD-AOD : *Dana (task 2)***
  - ◆ fake tracks at high pt
  - ◆ find best selection criteria ( hybrid tracks as jet and correlation groups ?)
  - ◆ define track momentum ranges and acceptance
    - ◇ We should define the region in eta where we want to correlate with tracks
    - ◇ Is a maximum pT cut needed to avoid fakes ?
- **pp trigger particle selection**
  - ◆ study the selection (pt, eta ranges) of the trigger particle
  - ◆ trigger region and associated pt bins: *Nicolas (task2)*
    - ◇ Correlation ranges in xE and zT
    - ◇ pT reach, fake tracks at high pT
- **MC productions**
  - ◆ Selection of available MC runs suitable for correlation studies
- **EMCal clusterization (for PbPb, more studies to be done)**
  - ◆ Pi0 analysis : V1+unfolding needs a final check *Gustavo (next week)*
  - ◆ Pi0/Eta event by event via cluster splitting with V1 : check (?)
  - ◆ EMCal charged clusters vetoing
    - ◇ pp : *Gustavo (done)*,
    - ◇ PbPb : further checks with data driven cluster selection in PbPb are needed
  - ◆ Neutral meson identification event by event via pair cuts : Tuning needed
    - ◇ check purity of mass cut range, variation with energy might be needed
    - ◇ the aperture angle need more checks
  - ◆ Neutral meson identification via cluster splitting in EMCAL
    - ◇ Need realistic MC for final assesment
    - ◇ for E< 20 GeV: *Gustavo (done)*
    - ◇ Splitting at high energy (E>20 GeV) of clusters might introduce too much contamination from wrong splits. It needs a careful look
- **Photon selection / shower shape**
  - ◆ MC tuning for photon pid: *Nicolas (task 1), Mauro (task 1)*
    - ◇ Cut on pt of particles in cone
    - ◇ a la Mauro : sum of the energy in trigger cone and background region, subtract and apply a cut on the remaining energy
    - ◇ What MC can be used for PID studies or correlation studies ?
    - ◇ Need to revise, adapt to the new mixing frame, or to use a "hand made mixing" like for pi0 analysis. If needed...
  - ◆ isolation
    - ◇ Isolation with track, clusters or tracks+clusters or just cells : *Nicolas (task 3)*
    - ◇ quantify impact of the acceptance (density method) : *Nicolas*
    - ◇ what is the effect on the efficiency
    - ◇ Effect of fiducial cuts on isolation decay/pi0
    - ◇ how to estimate systematic errors
    - ◇ impact of QA on isolation *Alexis*
    - ◇ isolation with method 2 : *Mauro (task 2)*
    - ◇ Systematic studies to be (re)done in pp (and PbPb separatedly) using data driven methods (decay photon, or pi0 cluster identification) or MC (embedded).
    - ◇ Do we need to apply flow corrections? If we concentrate in high pT maybe not.
  - ◆ Converted photon id (needed ?)
  - ◆ track matching : *Gustavo*

◇ what particles are in the cone ? good clusters all have a track matched ?

- **Efficiency**
  - ◆ Pi0, eta and decay photon tagging
    - ◇ check systematics and efficiency of EMCal cuts
    - ◇ efficiency, purity and background estimation : *Xiangrong (task 1)*
  - ◆ (need to check in PbPb)
  - ◆ Azimuthal eff correction : *Dana (task 3)*
- **Embedding** : This might need of a common production and discussion with other groups (PWGJE, PWGCF)
- **Background and systematic uncertainties**
  - ◆ trigger : decay and hadron contamination
    - ◇ need simulations with realistic pi0 spectrum
    - ◇ how to propagate the estimated background
  - ◆ xt, zt; how to estimate syst uncertainties due to background and underlying event subtraction : *Nicolas (task 4 : xE, zT systematic errors, contamination estimation)*
  - ◆ delta phi
    - ◇ pedestal subtraction : di hadron paper uses 3 different approaches. Avoid mixed events unless non uniform phi of tracks
    - ◇ cluster-track correlation eff estimation
      - how ?
      - how to propagate to Iaa ?
      - Contribution to flow ?
      - track eff : check eta-phi eff for diff pt and not integrated
      - how to estimate syst uncertainty due to background ?
  - ◆ non-Pi0 band correlations vs pi0 band : *Hongsheng (task 1)* and *Xiangrong (task 2)*
- **Comparison to simulation, to 2.76 pp data ?**

### photon spectra

- Triggered spectra normalization : *Alexis (task 2)*
- Direct photon predictions : *Alexis (task 2)*
- Direct photon INCNLO predictions : *Hugues (task 1)*
- QA : *Marie (task 1)*
- time cuts : *Marie (task 2)*

-- CatherineSilvestre - 06-Mar-2012

---

This topic: Main > CorrelationTaskList

Topic revision: r4 - 2012-03-07 - CatherineSilvestre



Copyright &© 2008-2021 by the contributing authors. All material on this collaboration platform is the property of the contributing authors.

or Ideas, requests, problems regarding TWiki? use Discourse or Send feedback