

# **ALICE PPR**

**- Jet Reconstruction -**

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# PPR TOC

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## EMCal-PPR Proposed Table of Content (Jet reconstruction)

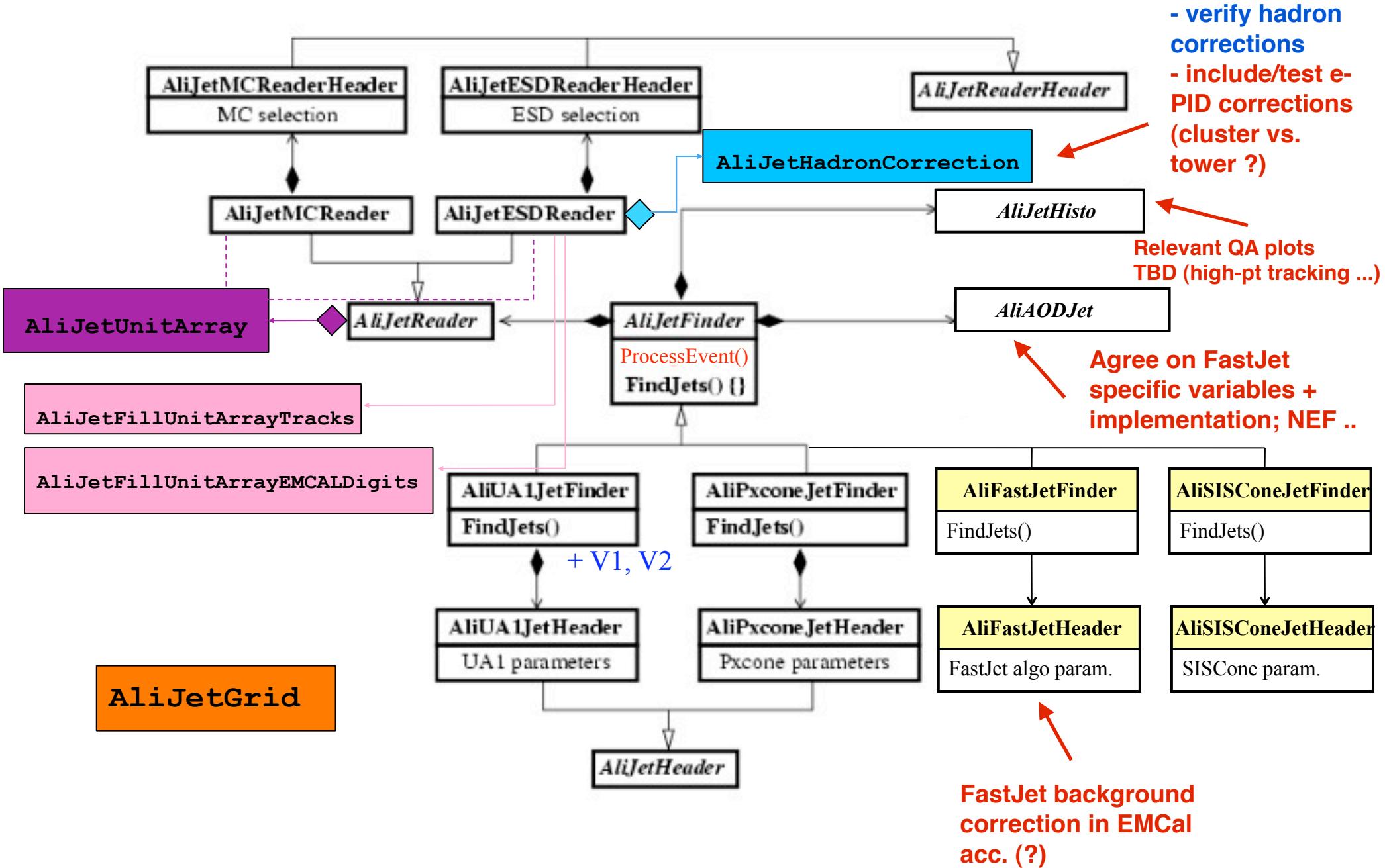
### **EMCal Physics Performance**

#### **1. Jet reconstruction**

- 1.1.Comparison of jet algorithms in pp/AA (Mono-Jets) (TBD)  
NLO effects and EMCal acceptance
- 1.2.Background: Fluctuations and Fake-Jets
  - 1.2.1.Fluctuations  
Determine sigma (HIJING)+ simple toy MC  
including radial flow and elliptic flow
  - 1.2.2.Fake-Jets  
Randomizing HIJING (other possibilities ?)
- 1.3.Jet reconstruction in pp (PYTHIA)  
Full correction scheme (tracking, jet energy resolution ...)  
(systematic error estimate)
- 1.4.Jet reconstruction in AA (PYTHIA+HIJING)  
Full correction scheme (see 1.3) + background and fake  
(systematic error estimate)
- 1.5.Constraints on energy loss models (QPythia)
  - 1.5.1.Jet RAA
  - 1.5.2.jet broadening measurements
  - 1.5.3.modified fragmentation functions
  - 1.5.4.*sub-jet distribution* (?)

# FastJet in ALICE (see Magali)

<http://alisoft.cern.ch/viewvc/trunk/JETAN/?root=AliRoot>



# FastJet implementation: Open issues (?)

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**In order to estimate systematics it is necessary to implement different correction schemes with enough flexibility !**

- **Hadronic correction:**

allow for different correction schemes to estimate systematics: no, MIP, 100%

- **e- PID:**

cluster vs. tower matching/PID: currently clusters have track matching, also towers (?)

Allow flexibility in PID cuts to estimate systematics.

- **EMCal acceptance/background subtraction (crucial):**

FastJet with reduced acceptance: problems with clustering at acc. border

Run only in EMCal acceptance how to treat background, e-by-e or stat. ?

i) FastJet method: need to run background with smaller R in EMCal acc.

ii) Using also TPC and scale charged to charged+neutral (?)

iii) Out-of-Cone method

iv) Statistical background subtraction

- **AliAOD:**

Need to include relevant variables for correction scheme: area, rho, sigma, NEF ...

# Summary

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- Simulations started (QA needed)
- FastJet integration in ALICE + Grid done/working
- Still some open issues in FastJet implementation to use for simulation (PPR) analysis

IMHO we should have a dedicated meeting to discuss these issues with the relevant groups (PWG4, TaskForce, EMCAL offline and PPR groups)!