

General software organisation in HESS-France

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Present status

At present in France:

Software rich and complex, produced by several developers:

- a 2nd calibration procedure
- 3 shower reconstructions: Hillas, 2D, 3D
- 2 analysis frames: ParisAnalysis, HAP
- μ DST developments
- several analysis algorithm developments: Xeff, weighting, ...

Need for: organise development work in a frame of a WG software-tools, with aim to:

- improve communication between developers and analysers
- enrich our software activity – new methods
leading to:
- enhance scientific productivity of HESS-France

Present status

- Raw Data management - APC (P. Espigat)
- Electronic Calibration & Data Base - LPNHE (JP. Tavernet)
Muon Calibration - LLR, LPNHE
- Reconstruction of shower parameters:
 - Model + Hillas - LPNHE (M. de Naurois)
 - 3D + Hillas - LLR (B. Khélifi)
 - Hillas - APC (A. Djanati + others)
- Analysis frame:
 - Parisanalysis - LPNHE (M. de Naurois)
 - HAP - APC (A. Djanati + others)
- Productions: DSTs - LPNHE, LLR, APC
MCs - LPNHE, DAPNIA
- Software μ DST et new estimators - LPTA (N. Komin), LAPP
- Quality Checks (various levels) - LPNHE, APC, LLR, LPTA

Objectives of the software-tools WG

Basic idea:

decouple development schedule (not aims) from the performed in parallel individual analyses

Organisation:

WG composed of librarians
(calibration, reconstruction, production)

1 contact person (AJ) in charge of:

- being up-to-date of the all software developments,
- centralising the current problems and requests from users
- being a convener of the software-tools meetings organisation and diffusion of the information
(5 meetings in 2007)

→ continuous contributions from users of the software

Strong coupling with HESS2 simulation WG (E. Moulin/A. Zech)

Last improvements

Concerned items:

- well known responsibilities and transparent actions
- fast analysis of the current problems
- provision of the software in 3 versions:
previous (old), public (prod), development (dev)
- with complete documentation
- simplified installation and utilisation procedures
- Data Quality checks
(calibration, reconstruction)

It required:

- agreement on the operation rules : code stability
- planning of different actions
- fixing priorities in the developments
- discussion/proposals of new tools for analysis and maintenance

Data and Code stability

- **Demand to maintain of the DSTs-old (1 previous version) at each new calibration applied on raw data**

- **Stability of the versions and tags:**

versions – old, prod, dev

accessibility for analysers: old et prod

version dev not in public use, except on demand to the librarian

- **Every update of a version prod follows rules:**

- justified by major changes
- preceded by a standard Quality Check (procedures under development)
- with transparency et archiving of changes
exists for ParisAnalysis: on ~parisanalysis/History

→ **the strong request for code consolidation has been fulfilled**

→ **a prod version is frozen**
1 month before HESS collaboration meetings

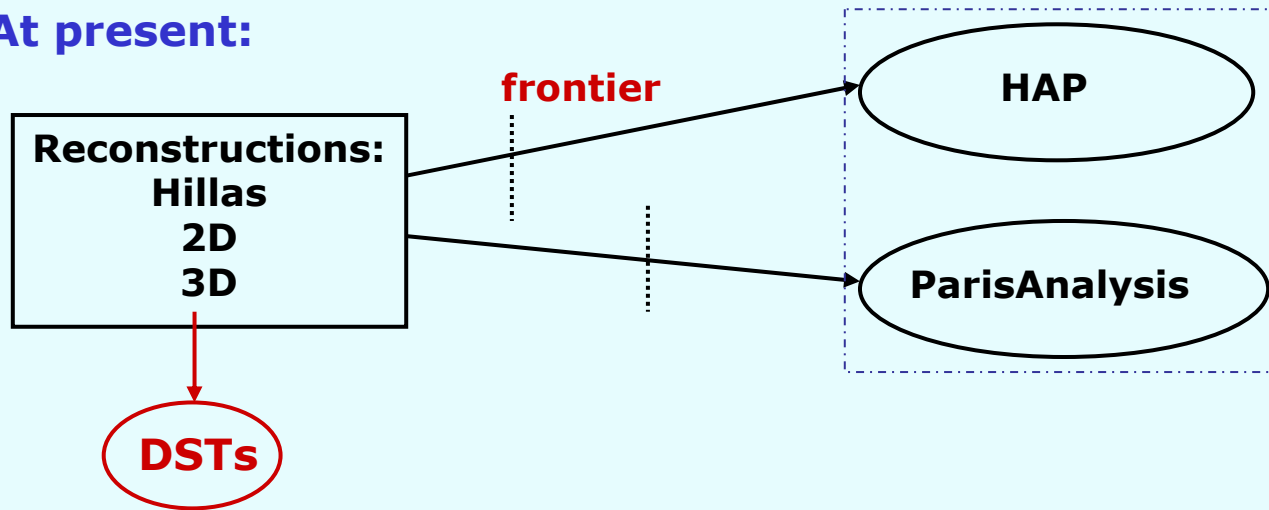
Future plans

- **Short/medium term:**

- rapid code and environment installation:
some standard scripts exist, important for collaboration with external users
(SETUP, INSTALL, EXPORT, IMPORT, ...)
- easy analysis job submission (via graphic interface – M. de Naurois talk)
- updates and standard set of Data Quality check histograms
based on benchmark analyses and on WEB
(some exist, work to be continued)
- studies of the systematic effects on angle and energy reconstruction,
background suppression, present and future HESS 2 phase
- proposals for new methods of modelling of extended sources,
diffuse emission, low luminosity sources, ..

Diversity and complexity

- **At present:**



- **Unify DST outputs : being done**
- **Keep 2 analysis frames
means to maintain the 2 chains – yes**

**discussion : which frame for which type of analysis
a point that could be underlined in this workshop**

Future plans

- **Longer term:**

- discussion on diversity and unification of our software
- Computing resources – CCIN2P3, local resources, GRID, ...
- Changes and developments for HESS phase 2
(at present in the frame of HESS2 simulation WG)
→ HESS2 developments will be included in the overall HESS software

- **We are happy to open our software domain to new groups !**