SUSANA status

- Summary:
- Track selection
- Analysis plugged in
- Short description
- DATA-MC plots at 189 GeV
- HAC clusters

SUSANA status

What has been done :

- SUSANA implemented in SKELANA 2.0 framework
- Track selection criteria
- REMCLU interface
- Event selection criteria
- Book keeping, General variables ...
- TPC track informations
- Charged, neutral particle infos
- Jet algorithm: LUCLUS,DURHAM
- b-tagging variables
- Isolated photons and leptons
- Special particle selection ("Heavy tracks", kink, degenerate chargino)
- Hermiticity algorithm

SUSANA status

Analysis implemented:

- Chargino analysis
- Neutralino analysis
- NN Squark analysis
- Heavy and stable particle analysis
- Kink search
- Degenerate Chargino analysis
- Degenerate Squark analysis
- Small IP analysis

The code is almost ready

SUSANA status

SKELANA2 framework

- Bit masking procedure
  - Track selection criteria decided in February
  - Alpha rejection
  - STIC off-momentum routine
  - Tight selection of VDID/IDOD tracks
  - Neutrals with dst mass code=0 and $E < 5$ GeV
  - HCAL anode readout (flag)
  - EMF noise (flag)
- REMCLU:
  - REMCLU common is filled
  - $\Longrightarrow$ Federica's talk this week

Ntuple studies are needed

SUSANA status

Event selection

- Global preselection :
  - at least 2 charged particles
  - transverse energy greater than 4 GeV
  - at least 1 charged particle with $Pt > 1.5$
- .OR. Kink search preselection
- .OR. Degenerate chargino preselection
- .OR. Degenerate squark preselection

Event selection status is stored in a bitted word (IPRSEL).
Additional selections are still possible.

SUSANA status

What is missing:

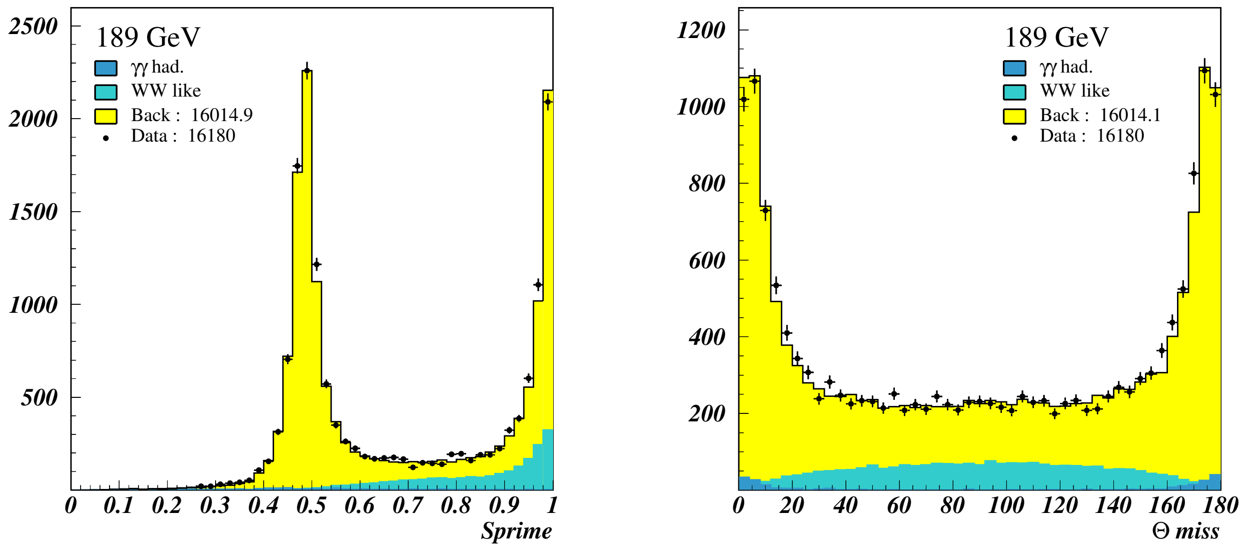
- Signal simulation informations
- Background simulation informations
- Analyses Specific modules: specific analysis preselection are missing.
- Cross-checks between analysis are welcomed to reduce the number of specific modules in the ntuples

Where to find the code:

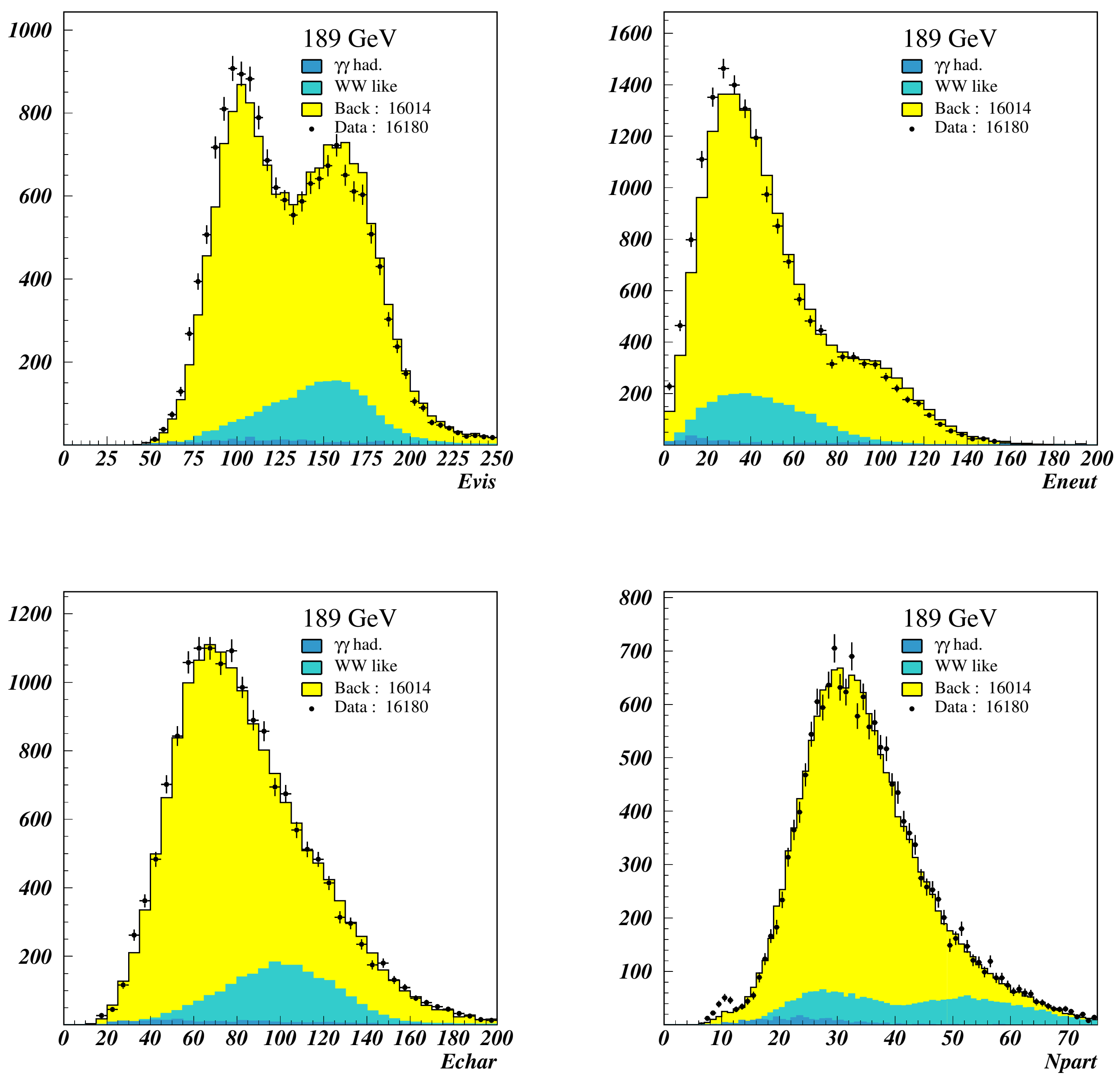
- /afs/cern.ch/delphi/tasks/susy/susana/code
- The code is under CVS for archiving
- Automatic procedure for large ntuple productions is ready
- Ntuples informations :
- http://delphiwww.cern.ch/teams/searches/delwww/susy/index.html

SUSANA status

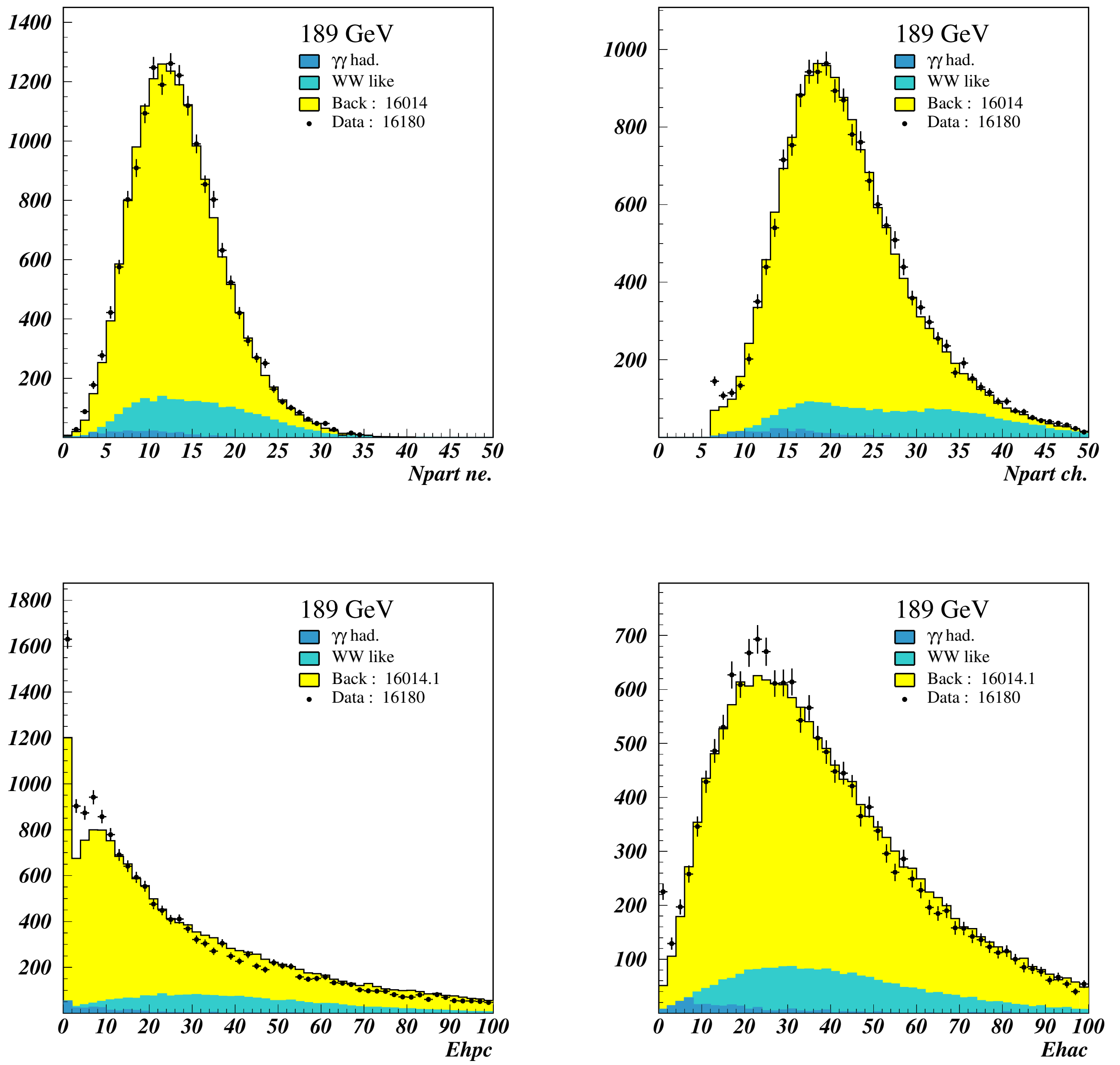
- Global selection : JBIT(IPRSEL,2)=1
- 6 charged tracks and 4 TPC tracks
- ET>40.
- at least 1 charged particle with Pt>4.



SUSANA status

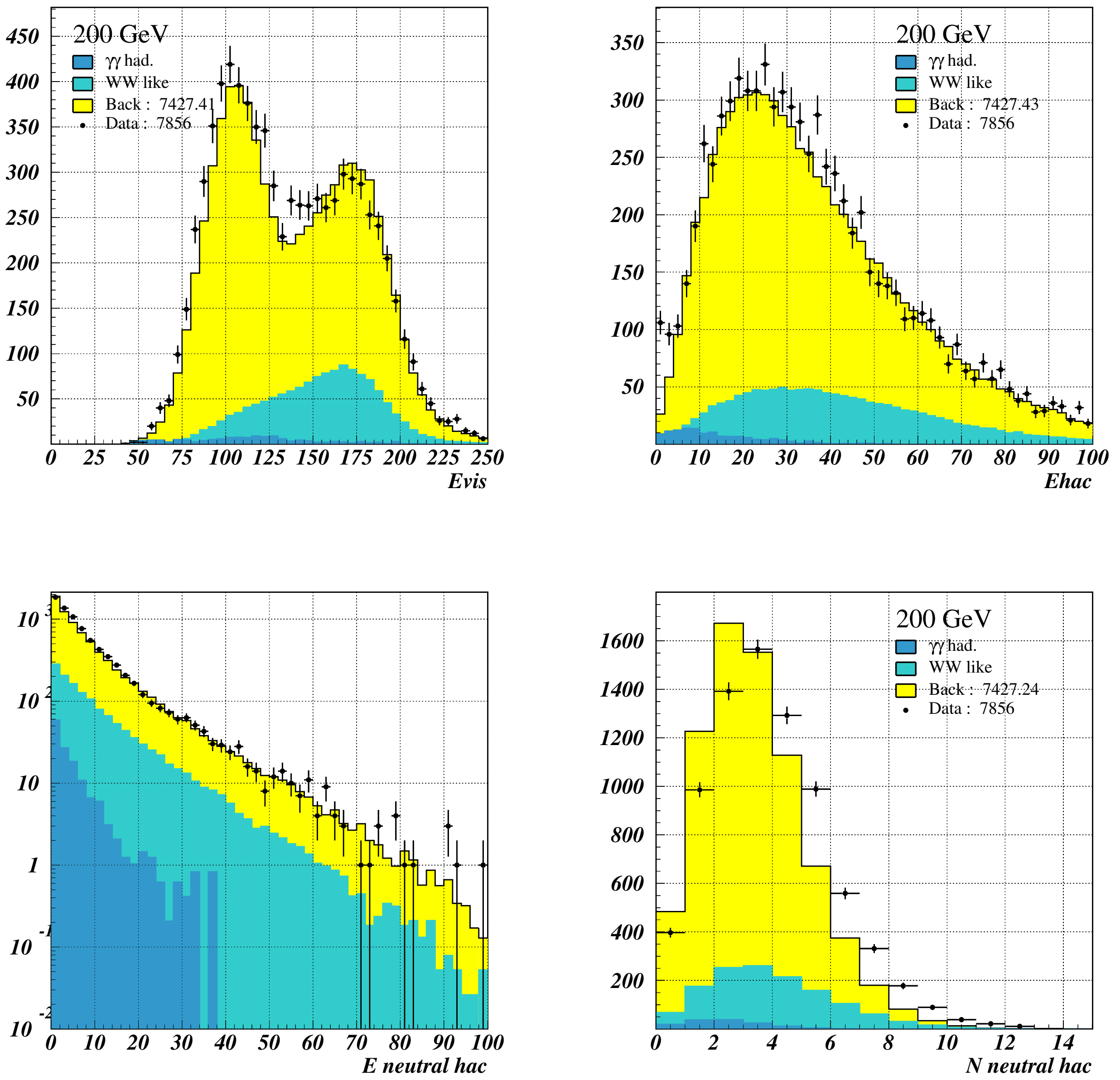


SUSANA status



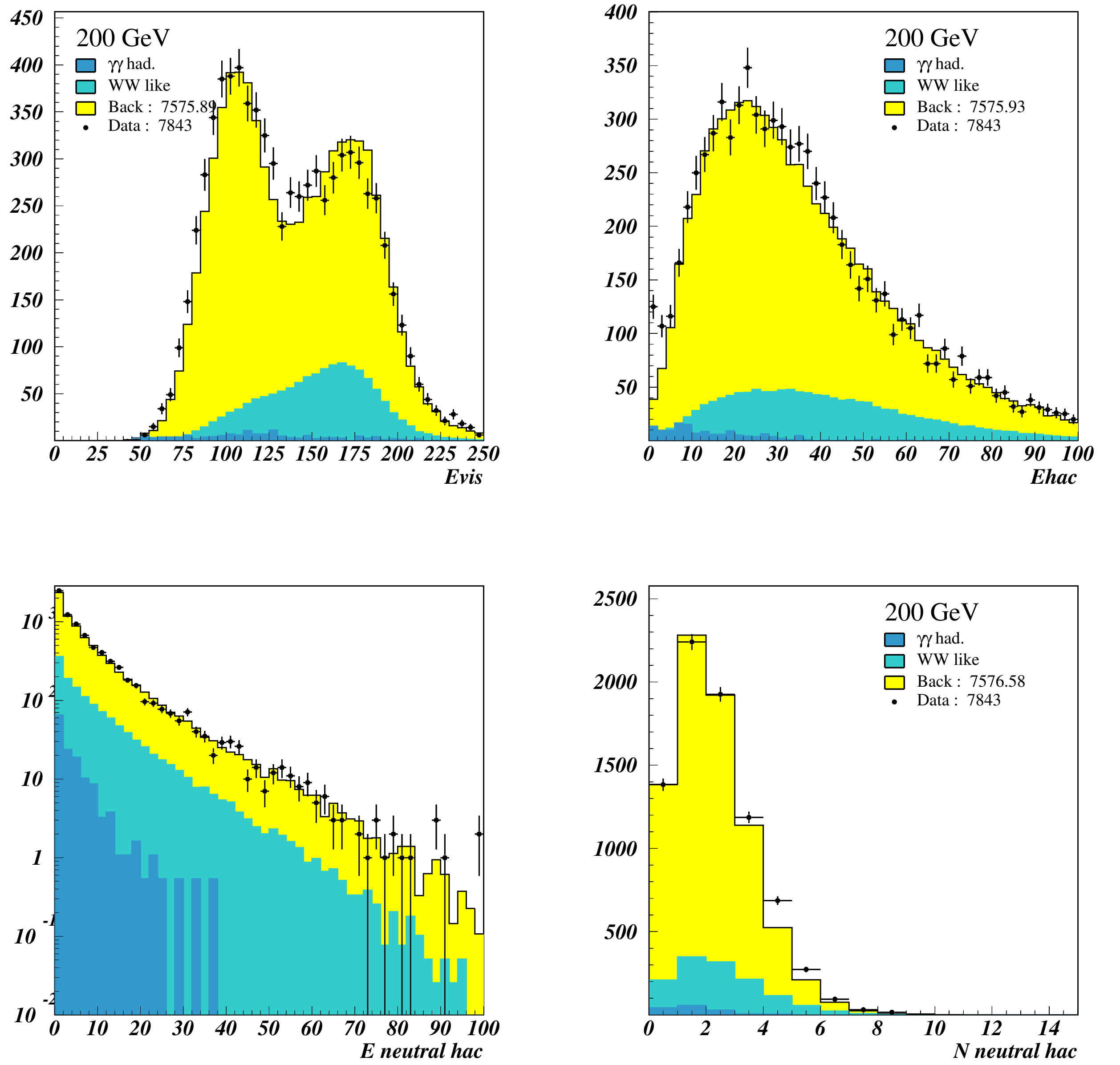
DATA-MC comparison at 200 GeV:

HAC noise subroutine



DATA-MC comparison at 200 GeV:

HAC Cluster below 0.9 GeV rejected



Conclusion

- **SUSANA is almost ready**
- **Known bugs were corrected**
- **A new ntuple production at 189 GeV is planned next week.**
  New analysis are welcomed
- **Feedback is now needed: It would be nice to test all the analysis included in SUSANA as soon as possible**
- **$\Longrightarrow$Technical meeting this week**