

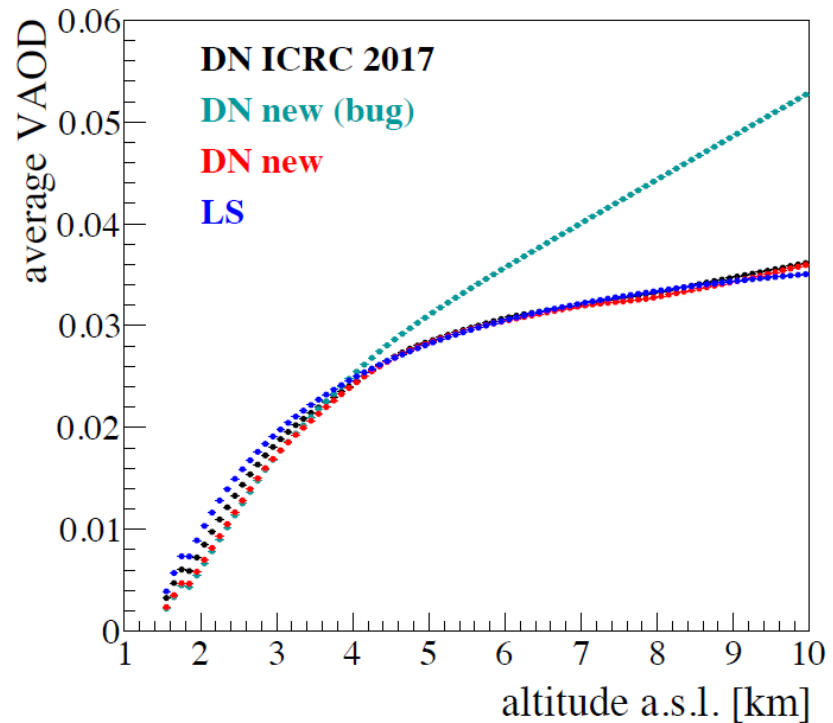
Hybrid data production test @ Lecce farm up to the end of 2017

What's new:

Aerosol DB based on the work by the Adelaide group (Violet et al.)

- Version "3" tested

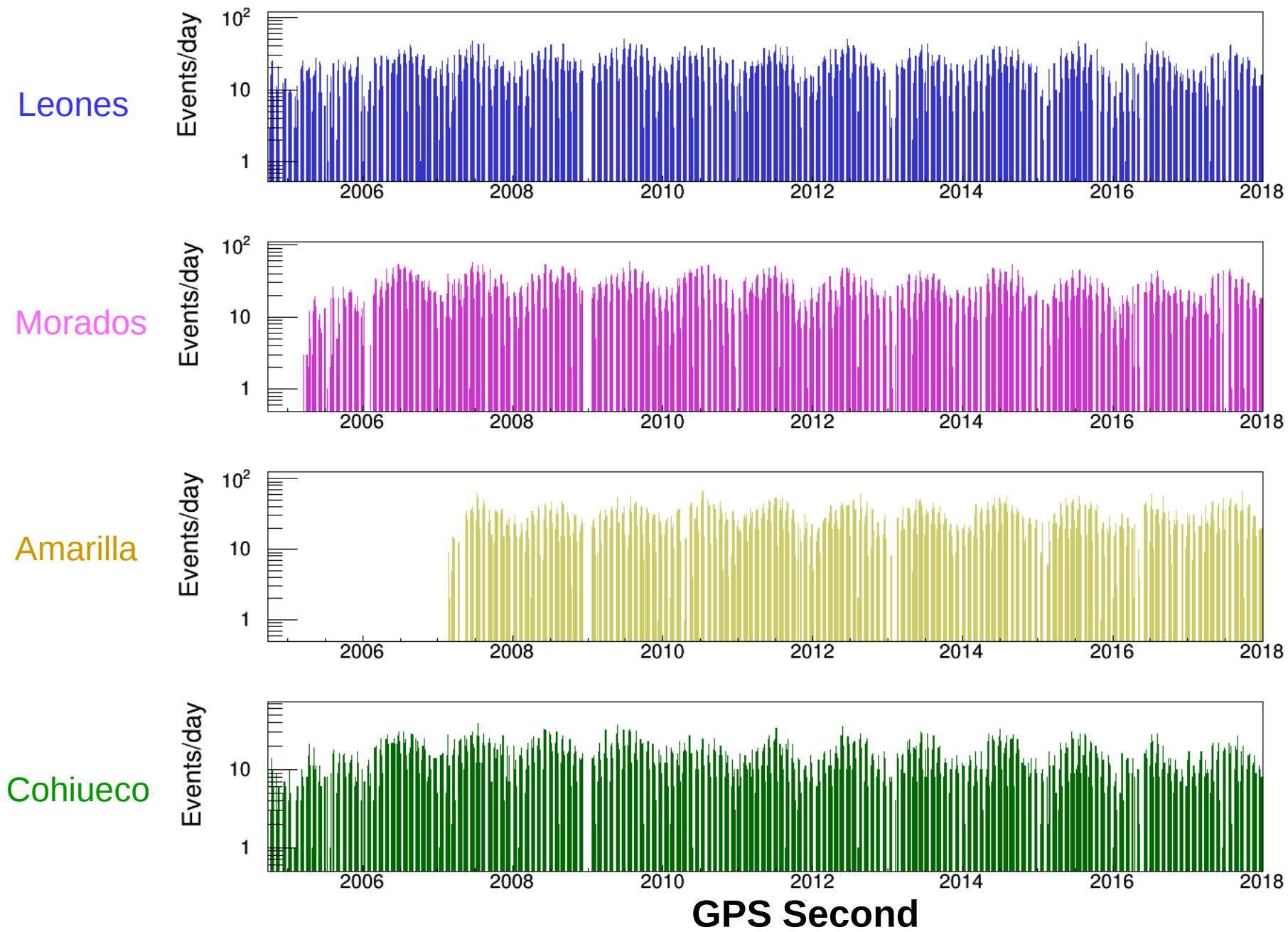
Plot by Valerio



bug corrected

Daily rate of selected hybrid events

Basic reconstruction level



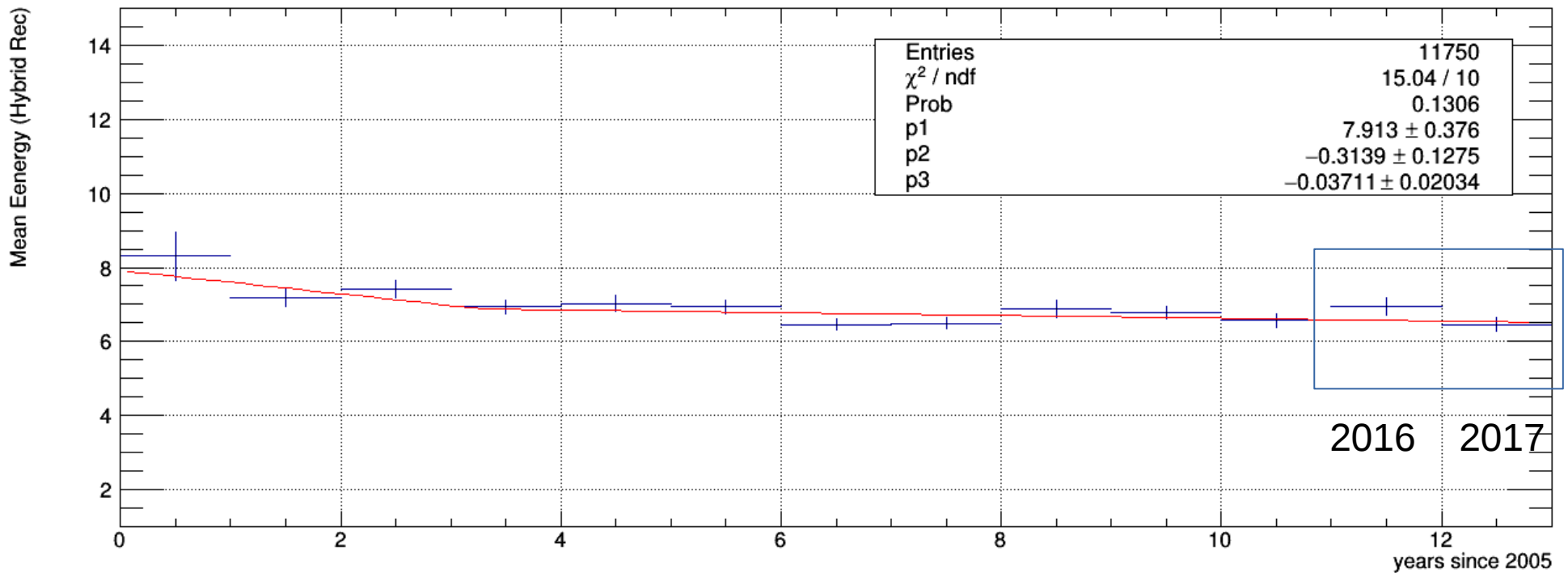
Time Stability

Last hybrid pre-production for
ICRC 2017

Violet Aerosol version 3 and Calibration DB

No cloud cut

$E_{SD} > 3 \text{ EeV}$

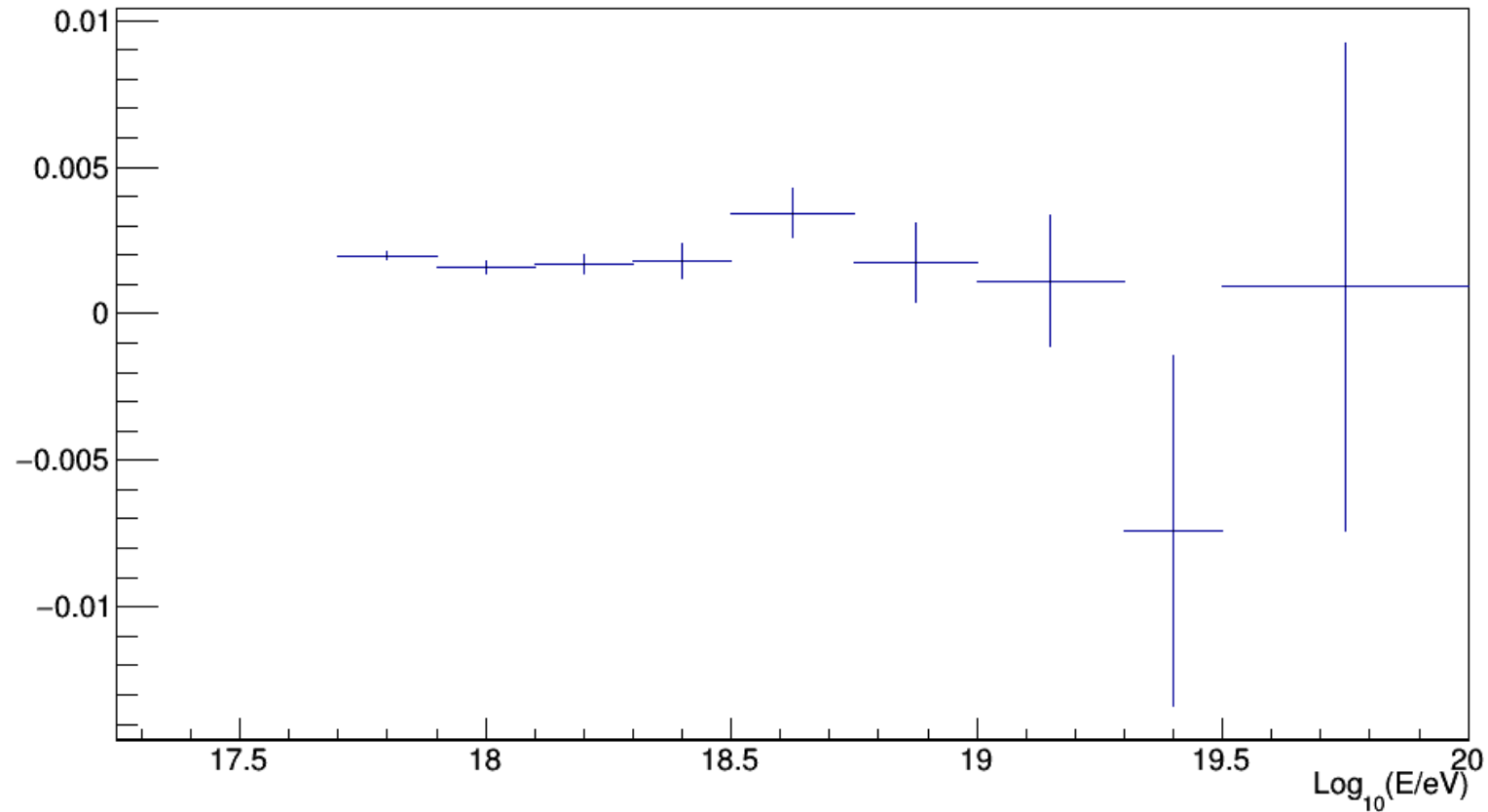


Drift after 2008 $\sim 1\%/yr$

- the entity of the drift depends on selection cuts)
- further cross checks to be done

Comparison with ICRC 2017

$2*(E1-E2)/(E1+E2)$ vs $\lg((E1+E2)/2)$

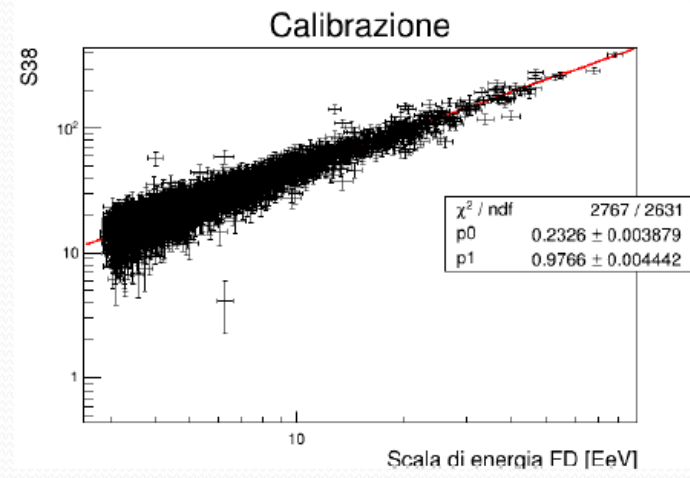
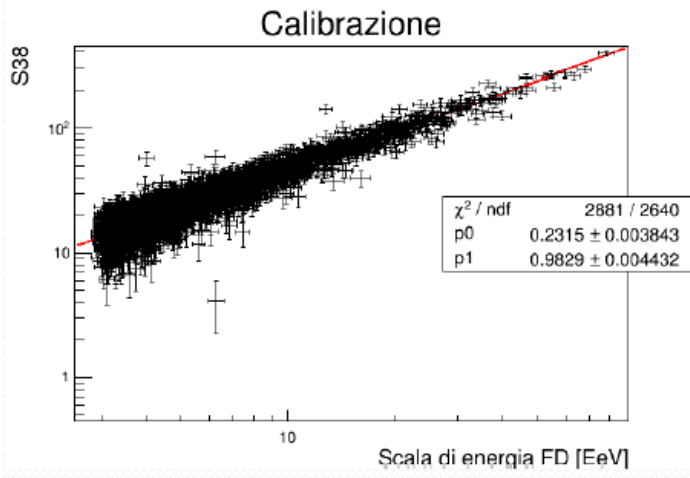


Event by event comparison on common data sample

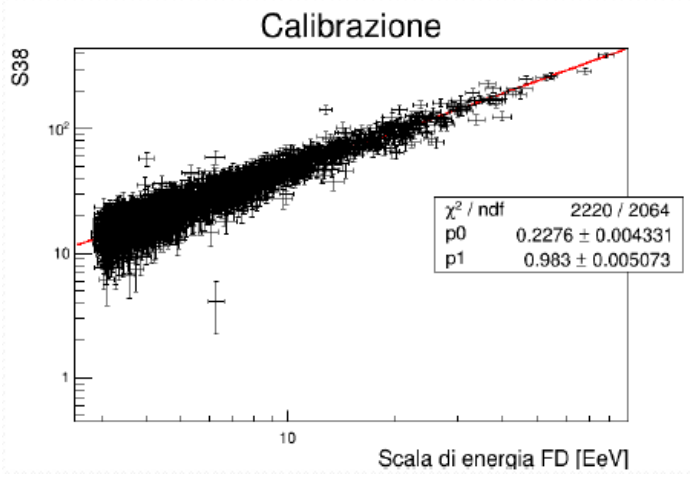
E1 → energy as in 2017

E2 → energy as it is now (Violet3 Aerosol DB)

Master thesis (C. Cardellini): study of the stability of the calibration



Not the official calibration fit!



Range	A[EeV]	B
2005-2017	0.235±0.004	0.978±0.004
2005-2015	0.232±0.003	0.983±0.004
2008-2017	0.233±0.004	0.977±0.004
2008-2015	0.228±0.004	0.983±0.005

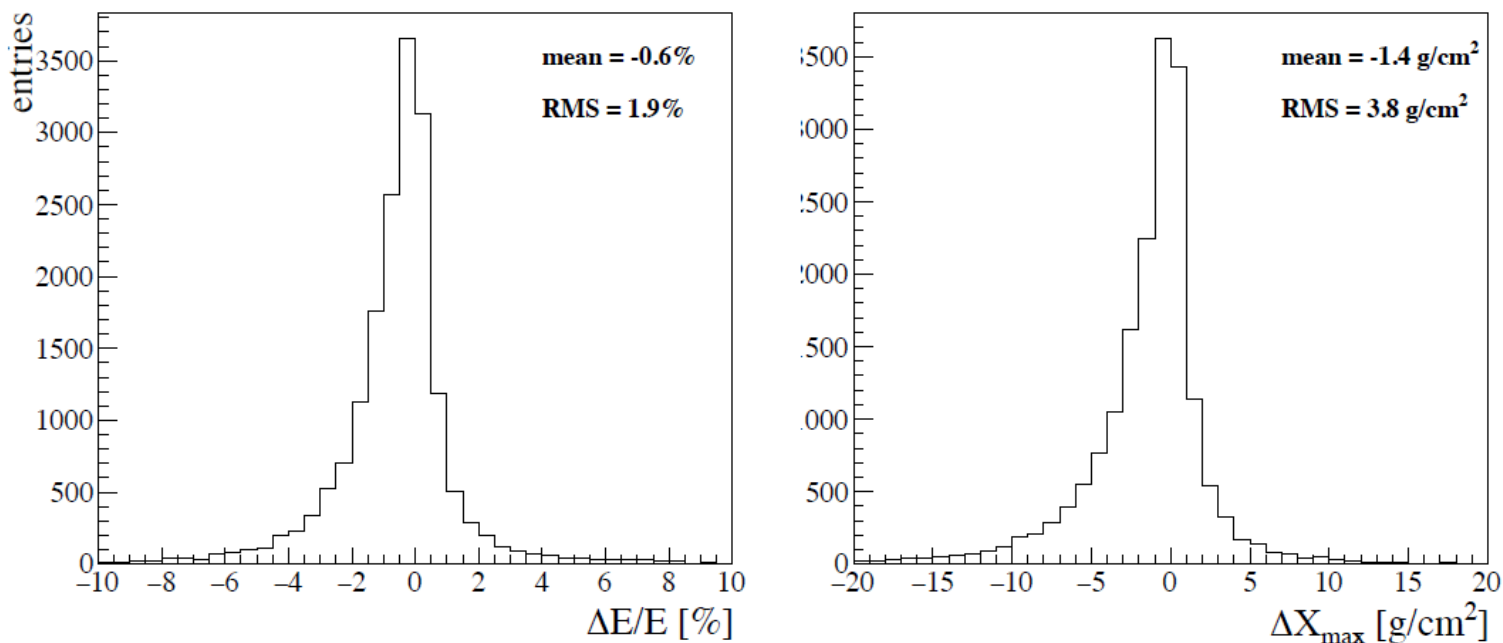
Parameters stay stable within uncertainties

More and comprehensive studies being performed on this production in collaboration with Valerio

Further checks being now finalized

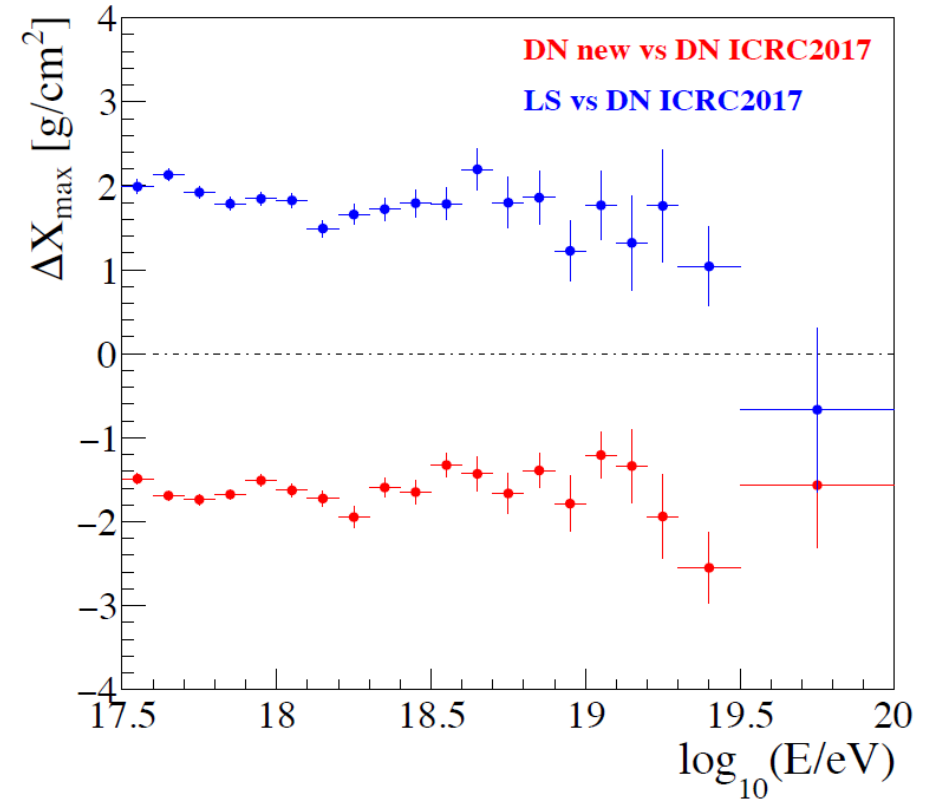
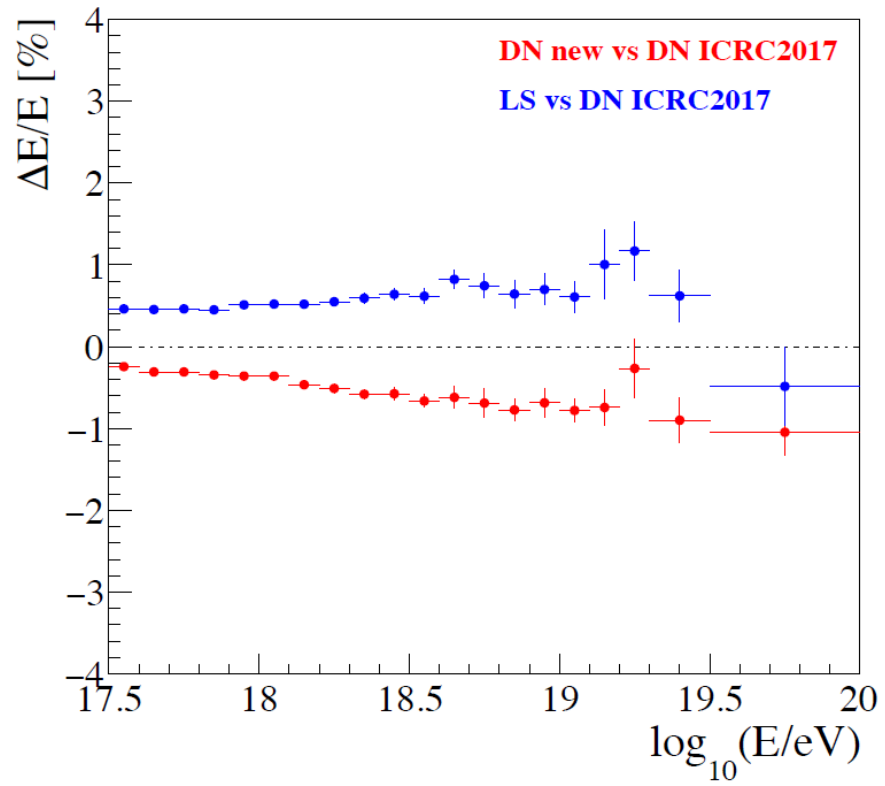
new DN by Violet vs DN ICRC 2017

$E > 10^{18}$ eV



Standard calibration cuts applied

Analysis done by Valerio



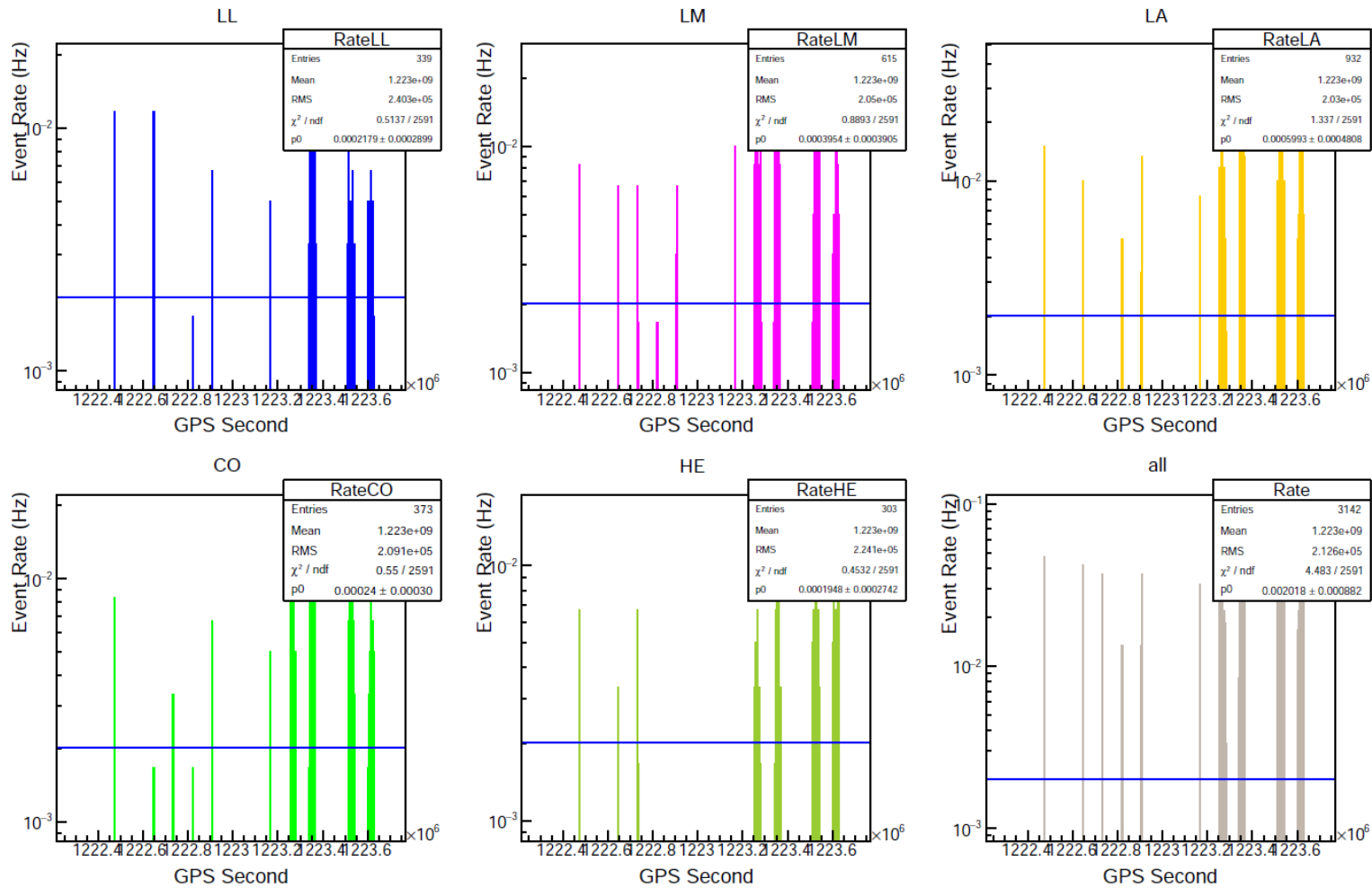
We are very near to have the production ready

Final checks:

- errors in new Aerosol DB still being checked
- Finalize the study of the E_SD/E_FD

Problem in data transfer from Malargue to Lyon propagate to the data production

From FD October 2018 shift report analysis



Problem fixed. Data transferred again to Lyon. Re-Production almost ready